THE JACKINTOSH BOSTON USERS GROUP NEWSLETTER
SUMMER 1987 $4.00

THE NORTHEAST ATARI COMPUTER FAIR

OCTOBER 10-11
WORCESTER CENTRUM

The BoSton Computer Society Jackintosh BoSton Users Group

A PUBLICATION OF
THE BOSTON COMPUTER SOCIETY
FOR ATARI ST USERS

AMG

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Subscription is free with membership in The Boston Computer Society or in exchange for a free subscription to the newsletter of any other Atari Users Group.

J-Bug will be published quarterly. Publications will represent Summer, Fall, Winter, and Spring.

J-Bug welcomes contributions of articles, reviews, and other materials related to the Atari ST Computer products. Material should be submitted on disk (hopefully 3 1/2 inch) and typed form and sent to the Editor (see officer list). If you have a modem you may submit material - text files, graphics, etc. - by uploading them to the BBS. Be sure to leave a Message to the SysOp giving him the names of the files.

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J-BUG REPORTS

FROM THE BRIDGE
By
Alan M. Glick

THE NORTHEAST ATARI COMPUTER FAIR 1987

Probably the most exciting news is the forthcoming Northeast Atari Computer Fair, sponsored by the The Boston Computer Society - Jackintosh BoSTon Users Group and Atari Corp., and being held at the The Centrum in Worcester, Mass on October 10-11, 1987. The times will be 10 am to 6 pm on Saturday, October 10 and from Noon to 6 pm on Sunday, October 11. The price for admission is $5.00 for general admission, $3.00 for BCS members (bring your membership card) and chidren under twelve, when accompanied by an adult, and $4.00 for user groups and students with proper identification. I would like to invite you to call our AtariFest Hotline at (617) 527-4952 for all the latest information on the show. I would also like to invite you to call the BCS Atari BBS (617) 396-4607 for my weekly series on the events as they unfold for this spectacular. They could be a newsletter in themselves. For instance, AtariFest #4 is fourteen pages long. Therefore, write it down, put it on your Bulletin Boards, place it in your newsletters, tell your friends, neighbors, co-workers, fellow students, and the person on the street, and by all means attend.

The Atari event of the year for the Northeast does not just materialize overnight. It will come about with the hard work of several individuals, those of us on the Atarifest committee, and as we get closer, the volunteer work of the entire Northeast Atari family, in which, if you are reading this you are apart. We need all the help we can get. More on this later. The Executive Committee consists of Alan M. Glick (co-chairman) - oversee entire project for BCS J-BUG, responsible for all mailings to vendors, dealers, and user groups; Lee Pappas (co-chairperson, Editor/Publisher Analog and ST/LOG Magazines) - responsible for Worcester end of things, including CENTRUM, booth assignments; Jerry Wolosenko (President Apex Resources/CSS-East) - responsible for mini-trade show for dealers on October 9; Thom Graziano (President, CompuClub) - responsible for seminars; Al Hospers (Vice-President, Dr T's Music Software) - responsible for midi extravaganza; Jim Kelley (PR coordinator) along with Jim Nagle and Bill Hughes (representing Miller Communications, PR Firm of The BCS); John Faber (Director 8-Bit) - responsible for user group needs and volunteer support 617-377-4008; Dave Sheibley (P/D Librarian) & Jerry Feldman (Treasurer) - miscellaneous acitivies, including AtariFest Hotline; Angie Rothenmaier and Roxie Sawchuk (Apex Resources/CSS East) - PR committee activites; Andy Bell - Atari Corp. N.E. District Manager; Jim Fiala - Atari Corp. N.E. Regional Manager; Gordon Cowie - Budget Commitee; special thanks to DIANE GAH (Managing Editor Analog and ST/LOG magazines) - for doing it all and doing it with perfection; and Sandi Austin (Atari Corp. - User Group Manager) - for her patience, guidance and support.

Below is a list of participants at press time:

Vendor-(v);
Dealer-(d);
User Group-(ug);
Bulletin Board-(bbs)

Alpha Systems (v)
Analog Publishing (v)
Antic Publishing (v)
Astra Systems (v)
Atari Boston Users Group (A-BUG) (ug)
Atari Corporation (v)
Atari Explorer (v)
Avant-Garde Systems (v)
Beckemeyer Development Tools (v)
Best Electronics (v)
CompuClub (d)
Current Notes, Inc. (v,ug)
Data Pacific, Inc. (v)
Delphi (v,bbs)
Digital Vision, Inc. (v)
Dr. T's Music Software (v)
Eidersoft USA Inc. (v)
Electronic Arts (v)
First Star Software (v)
Foresight Resources (v)
Fort Devens Atari Users Group (ug)
Future Systems Software (v)
GEnie (v,bbs)
GLASS (ug)
Hybrid Arts (v)
ICD, Inc. (v)
Iliad Software (v)
Jackintosh BoSTon Users Group (J-BUG) (ug)
Kurlan Music (d)
Megamax (v)
Michtron (v)
Microdraft (v)
Microprose (v)
Migraph Inc. (v)
Omnitrend (v)
Practical Solutions (v)
Prospero Software (v)
Quantum Microsystems Inc. (Q.M.I.) (v)
Quickview Systems (v)
Regent Software (v)
RF Microtech (v)
Rhode Island Atari Computer Enthusiasts (RI-ACE) (ug)
Seymour Radix (v)
SoftLogik Corporation (v)
Software Connection (d)
Software Haus (d)
Static Engineering, Inc. (v)
ST X-Press (v)
Supra Corporation (v)
Syntronics (d)

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ATARI BUYS FEDERATED GROUP
RETAILERS FOR $67.3 MILLION IN CASH
24 August 1987

Atari Corp. has agreed to buy Federated Group Inc., a retail electronics chain, for $67.3 million in cash. Federated's seven-member board unanimously approved the $6.25-a-share offer on August 23, according to a joint statement from the companies, the Associated Press said on August 24.

Atari will gain 65 retail consumer electronics stores in California, Arizona, Texas and Kansas. That could be a boost for Atari, which has had trouble finding retailers for its products.

Among other things, the merger hinges on the approval of Federated's lenders. Under the terms of the agreement, Atari will commence a tender offer for all outstanding shares of Federated on or before August 28, 1987, according to Reuters.

Atari said a partnership led by the chairman of Federated, Wilfred Schwartz, had agreed to tender its 55% Stake in Federated, and that Atari will acquire any shares outstanding following the consummation of the tender offer at the same $6.25-per-share price.

The closing of the offer and merger is subject to the approval of Federated's lenders and to at least 51% of the outstanding shares being validly tendered and not withdrawn.

The Federated Group, based in Commerce, California, lost $895,000 in the first quarter (ending May 31), compared with a profit of $662,000 for the same period last year, according to the AP. Sales rose 2%, to $91.1 million. Federated has about 10,764,000 shares outstanding.

In the second quarter (ending July 4), Atari's profit was up 39.3% to $13.54 million.

COMMENTARY ON ABOVE

Jack seems to have two new marketing schemes. The first, as the above suggests, is the Tandy approach - open up his own base of Atari related stores. His second approach is to only sell the 4 Megabyte ST in authorized specialty stoes. To become authorized means that your willing to have an outside sales force. This seems to be the next step up from his previous 1040ST authorization of having a store front and being a full service center. Even though it is early in the game plan, it is this author's opinion that this approach is doomed to fail. First of all, he is iritating those presently authorized, who, along with their consumer base, have waited anxiously for the mega's arrival but can't legimately support an outside sales force. Secondly, and I know all the Atari dealers in the northeast, only one, and this is a major name dealer, has tried using an outside sales force, and failed. What you need Jack is an marketing plan based on the 'POWER WITHOUT THE PRICE' theme. Let's call it 'EDUCATION IS POWER'. You need an knowledgable Atari Software marketing/sales force to educate the store sales community. It's going to be a salesperson's software knowledge and how to use that software base (support) that is going to sell the MEGA line of computers. Enough said.

AVANT-GARDE SYSTEMS
381 Pablo Point Drive
Jacksonville, FL 32225
(904) 221-2904

PC DITTO - IBM COMPATIBILITY

For those of you who are interested in IBM compatibility the following is a list of PC software that is "Certified on PC-Ditto (version 2.0) as of 5/11/87" according to a list provided by Avant Garde Systems (taken from an article by Roger Hamilton 'Summer CES News' in the July '87' issue of The STING REVIEW of the ST INterest Group of Minnesota, who in turn gives credit to Nevin Shalit, MANIA (Manhattan Atari User Group).

SPREADSHEETS/INTEGRATED PACKAGES

Ability, Enable, Express Calc, Framework, Framework II, Javelin, Knowledge Man/2, Lotus 123, Multiplan, PFS: Professional Plan, PC-Calc, Supercalc 3 & 4, Symphony, The Smart System Software.

RECREATION

3 Demon, ABM, Backtalk, Battlezone, Blackjack, Buck Rogers, Castle, Cyclops, Dragon World, Flight Mare, Hobbit, Infidel, Island of Mystery, Jet, Jump Joe, Microsoft Flight Simulator, Mind, Monopoly, Musician, NFL Challenge, Novatron, PC-Golf, PC Chess, Paino Man, Planet Fall, Pool, Serpentine, Spacewar, Starflight, Startrek, Striker, The Witness, Trekun, Zork I, II, and III.

GRAPHICS

Art Studio, Atlas Mapping Sofware, Chart Master, Charts Unlimited, Cheap CAS, DDCAD, Dan Bricklan's Demo Program, Draw!, EasyCAD, EasyFlow, Executive Picture Show, Freelance, GRASP, Graph in the Box, Graphassembler, HyperGraphics, Map Builder, Microsoft Chart, PC Storyboard, PC Draft, PC Key Draw, Personal Computer Picture Graphics Systems, Present Slide Presentation System, ProDesign !!, Slide Write Plus, The Grafix Partner, VCN, World.

PERSONAL / HOME FINANCE

AES: The AES will now send repeat clicks if the button is held down on the arrow or page controls of a window, which lets a window smooth scroll. The AES underscore bug is now fixed. APPL_TPLAY and APPL_TRECORD now work. The limit of 30 characters on a line in a alert box is now rigidly enforced.

MOUSE: The mouse redraw can now be set to XOR mode. The system will return after a single click if this is what was required.

DMA: The DMA bus can now have more than one device attached at powerup time, without any special software.

FLOPPY: The floppy read/write code checks for more errors now. In prior versions, the system would not report a CRC error under certain circumstances; now it will. This hurts some copy protection schemes. The format of the floppy disk has been skewed from track to track to improve disk speed; the XBIOS supports this by using -1 for the skew value and placing a pointer to a one word per sector skew table in the previuosly unused longword.

VDI: The VDI will now draw arcs with small angles.

BIOS: Character out routines are now much faster.

BLITTER: Automatic blitter chip support is included in line-A and VDI calls. The extended inquire will report a larger performance factor than before, allowing applications to check for the presence of the blitter. A new XBIOS call has been added to check for the blitter and to activate or deactivate it. The blit is not reentrant--line-A and VDI should not be called from within an interrupt.

REGISTER: The register D0, D1, D2, A0, A1, A2 have always been forfeit when a trap call was made. Now the demise of these occurs under more conditions than before.

MEMORY: Slightly more RAM is used by the system. Programs that were close to the edge on a 520ST may no longer fit.

VARIABLE: Most undocumented system variables have been moved. You were warned.

NOTES AND WARNINGS:

1. Some programs depend on the OS always being at $FC0000. This is "not" cast in stone and will probably change soon. To find the OS header, use the pointer 'sysbase" as documented.

2. The 4 megabyte ST puts the screen near the end of accessible RAM. Sloppy programs that have been written past the end of the screen will give bus errors if they do so on the 4 meg ST.

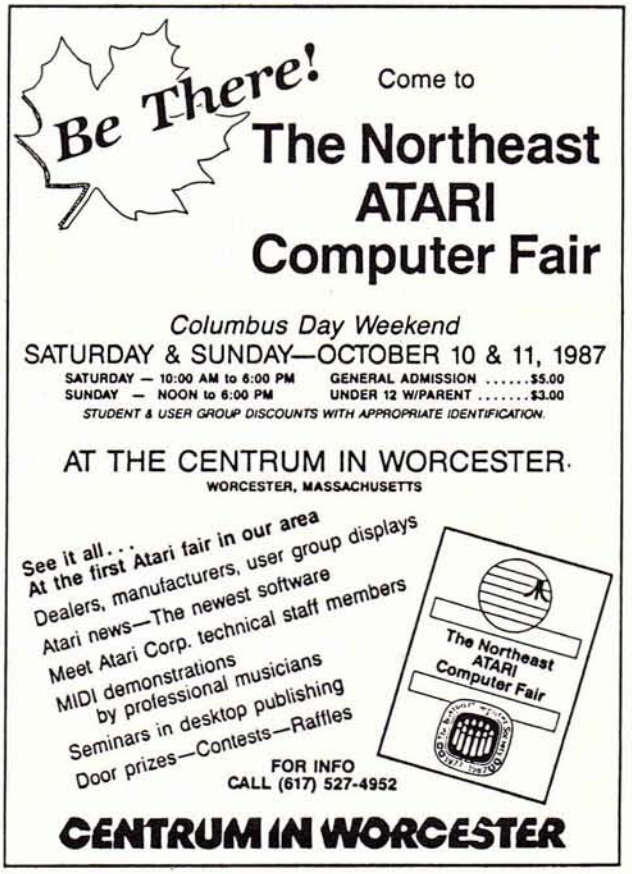
(ED. Taken from the September 1987 issue of the First Atari Computer Club of Spokane newsletter)

OUT WITH THE OLD ...

Al Rizzo, the Atari representative, in one way or another, for as long as I can remember, has moved on to consumer electronics and has opened a restaurant in Wells, Maine. The restaurant is is called THE CAPRI FAMILY BISTRO, U.S. Rt 1 North, Wells, ME (207) 646-7366. If your in the neighborhood, drop in, enjoy some good Italian/American cuisine and say hi to Al (Al works weekends). Best of luck to Al and his family.

IN WITH THE NEW ...

The new N.E. District Manager is Andy Bell. Andy comes to us by way of Tech Plus, the Amiga manufacturing representative. If you have an Atari product you should give Andy a call, at least monthly, and find out what's new. Andy can be reached at (617) 655-4069. Andy tells me he is looking forward to hearing from one and all. Let's not disappoint him. Best of luck Andy. Andy has been helping out on the PR effort for the Northeast AtariFest.



Terrific Peripherals (v)
The Bit Bucket (d)
The Boston Computer Society (ug)
The Computer Bug (v)
True BASIC Inc. (v)
Virtusonics (v)
White Lion Software (v)
Whitesmiths (v)
WordPerfect Corporation (v)

WHAT TO EXPECT

CAD

Migraph will be showing final version on M/CADD 2D - 3D version on the way; Foresight Resources will be presenting final version of their highly acclaimed DRAFIX (first time showing final version); Antic will have Tom Hudson to demo his CAD 3D version 2.0. Iliad will have ATHENA II, a favorite of Dave Sheibley, our disk librarian. Both Q.M.I. and Michtron should have their Mitsubishi touch tablets.

DESKTOP PUBLISHING

SoftLogik will have PUBLISHING PARTNER along with a slew of fonts and graphics packages from the Font Factory. Migraph will have EASY DRAW and first time showing of SUPERCHARGER. Shawn Fogel, President, SoftLogik and Kevin Mitchell, President, Migraph will participate in Desktop Publishing Seminar.

EMULATION

David Small of Data Products will have his MAGIC SAC, MAC emulator, on hand. Hopefully, the disk read direct will be finished by show time. Bill Teal will be here with PC-DITTO, the IBM emulator which is sweeping the country with the highest praise. Dave and Bill are expected to give a seminar.

LANGUAGES

Prospero Software from England has Pro-Fortran and Pro-Pascal; Michtron has their GFA BASIC series; True BASIC inc will have True BASIC (this author's favorite Basic for the ST); Megamax will have their latest version of MEGAMAX C.

WORD PROCESSING

First time showing - final version of WORDPERFECT from WordPerfect Corp.; Regent Software will have their REGENT WORD II; let's not forget that public domain STWriter version 2.0 should be available by show time. Version 2.0 is suppose to support GEM.

MISCELLANEOUS

There will be seminars in Midi, Desktop Publishing, VAR's, ; Contests such as MIDI MAZE, in which 16 computers play off against one another in Kill a Happy Face. A Casio CZ101 to the winner; Door Prizes and a possible raffle. There will be a daily MIDI concert featuring AL Hospers of Dr. Music Software.

and more ... (for a individual description see the AtariFest Reports on the BCS ATARI BBS (617) 396-4607. Please, pretty please, pretty please with mayo - DON'T CALL ME FOR INFO, refer to AtariFest HOTLINE at (617) 527-4952.

RELEASE OF THE 4 MEGABYTE ST

The Northeast Atari Computer Fair has been given the honor of being the event to finally release the 4 Megabyte ST - yes, this means you can be the first to purchase your very own 4-Megabyte ST at the Northeast AtariFest. Since these machines contain the blitter, I thought I would add this information on the blitter and their new ROMS. No release date for Blitter or ROMS for old machines. At present they are all going into the new MEGAs.

TOS ROMS - BLITTER VERSION

The 1987 version of TOS is scheduled for release in conjunction with the new "blitter" chip. The new TOS has been upgraded to include support for the hardware blit as well as retaining the software blit functions for full compatibility with older softare which relies on hardware timing (definite no-no).

Change in the new ROMs are:

RS232: The RS232 handler has been completely rewritten. RTS/CTS hand-shaking now works. Baud rates 50 and 75 now work.

CLOCK: Support is now included for the Mega ST's built-in battery-backed-up realtime clock. The realtime clock is automatically used by the XBIOS gettime and settime functions for the IKBD. The GEMDOS clock is reset from the realtime clock at the termination of every program.

STARTUP: Memory clear at system startup is much faster, improving performance on multi-megabyte systems.

DESKTOP: The desktop now includes a control for deactivating/activating the blitter chip. Also, the Save Desktop and Print Screen selections will request confirmation. Spurious characters are no longer written to the DESKTOP.INF file. Doing a PRINT or SHOW from the desktop will now display characters with Ascii codes above 127. SHOW and PRINT use a larger buffer now. Single drive copies now require fewer disk swaps.

CART: Cartridge handling has been revised, eliminating the need for "CARTSTART" code and allowing .TOS and .TTP programs. Lower case letters will now be accepted and passed to the application from the "Open Apllication ... Parameter" box.

Chase Spectrum, Dollars and Sense, Finance Manager, Invest, Loanpak, Managing your Margin, Money, Options, PC-Check, PC-Stock, Swift Tax, Sylvia Porter's Investment Manager, Sylvia Porter's Personal Finance Series, The Evelyn Wood Dynamic Reader.

PROJECT MANAGER

Harvard Total Project Manager, Job Scheduler, Microsoft Project Tool, ProTracs, SuperProject, Timeline.

WORD PROCESSING

Brown Bag Word Processor, DataFlex, Documax, Facelift 2, IBM Writing Assistant, LeScript, Lotus Manuscript, Microsoft Word, Multimate, OfficeWriter, PFS Professional Write, PC-Write, Volkswriter 2, Word Perfect, Wordstar, XY Write.

WORD PROCESSING ADD-ONS

Electric Webster, Exact, PC-Outline, Resident Speller, Think Tank, Wester's New World Spelling Checker, Whoops.

BUSINESS PRODUCTIVITY

1-2-3- Report Writer, Bottonline (and 5), DataLaw/PC, DataLaw/Mger, Datamite, DesqView, Dosamate, Exsell, Flashcode, Form Tool, GEM, Holmes, Inset, Instant Recall, IT Figures, Keep Track, Keynotes, LETRIX, Markis Marketing, Metro MonoGrafx, Multiple Choice, Org, PC Window, PC Desk II, PC DeskMates, PC Menu, People Planner, Printworks, Q&A, Q DOS, Qwikeys, Salemaker, Sales Repeater, SB Assistant, Sidekick, Sideways, Smart Notes, Superkey, The Newsroom, What's Best!, WindowDos, XYZ COnsolidate, XYZ Query, XYZ Spread.

UTILITIES

1dir, Arc, Alter, Back It, Beep, C Format, DGS Edit, DMS (Disk Mngmnt System), Diags, Dismod, Disptest, Download, EBL (Extended Batch Languages), Eraq, Fancy Font, Fatdump, Fileminder, Flashcode, FormManager, IBM Professional editor, Keyboard Commander, L$d, Lu86, Lasercontrol 100, List2day, Microsoft C Codeview, Move, NewKey Norton Commander, Norton Utilities, Nosetarc, Nostradamus Utilities, PC Status, Page, Path Master, Printer Boss, Program Master, Query, R-Doc/X, Recall, RE/Call, Rendir, Screen Generator, Screen Sculpter, Sdir, Secure 2, Setarc, Showback, Sorted Directory (d.Com), Speedy 3, SquareNotes, Still River Shell, Superen, Sweep, SymDeb, Treedir3, UltraPrint, Ultra-Utilities, Util, VCopy, Watchdog, Wordtech dBase III Compiler, XTREE.

OPERATING SYSTEMS

Compaq DOS, Eagle DOS, PC DOS 1.1, 2.0, 2.1, 3.0, 3.1, 3.21, 3.3

LANGUAGES

ESIE, GW Basic, Microsoft C, Microsoft Macro Assembler, ProFlo, Quelo 68000 Assembler Package, True BASIC, Turbo Pascal, Turbo Pascal Graphics, Turbo Prolog, XGEN, ZBasic.

TRAINING

AutoMentor, IBM Tutorial, Tutor

DATABASE

Cornerstone, dBase II, dBase III, dBase III Plus, Enrich, File Express, FoxBase +, IBM Filing Assistant, PC File, PC Manager, PowerBase, PractiBase, R:Base 5000, RESQ, Reflex, Seekeasy, ZYindex.

ACCOUNTING

BPI Accounting Series, DAC Easy Accounting Systems, Dome Simplified Bookkeeping, One Write Plus I & II, Open Systems, Open for Business Accounting, PC Accounting, PC General Ledger, Solid Gold Real Estate, TAS-Books.

COMMUNICATIONS

1 Ringy Dingy, ASCOM, Carbon Copy, Crosstalk XVI, IBM MINI, Procomm, QModem, Smartcom II, TeleVision.

EDUCATION

Software Express Education Collection

ABACUS SOFTWARE
P.O. Box 7219
Grand rapids, MI 49510
(616) 241-5510

ABACUS keeps on moving right along with the publication of their 13th and 14th books. You need to construct a bookshelf for them alone. Book 13 is 'ST Disk Drives:Inside and Out'. Book 14 turns out to be their new Book 1 'The ATARI ST for Beginners'. This book takes the place of 'Presenting THE ATARI ST' and is the book they should of published in the first place. However, I wasn't one of those major critics of it, so if you see it. buy it - it destines to be a collector's item. Don't forget the other excellent books (or Volumes as Abacus refers to them) in the collection.

Vol. 2. ATARI ST Internals
Vol. 3. ATARI ST GEM Programmer's Reference
Vol. 4. ATARI ST Machine Language
Vol. 5. ATARI ST Tricks & Tips
Vol. 6. ATARI ST Graphics & Sound
Vol. 7. ATARI ST LOGO User's Guide
Vol. 8. ATARI ST Peeks & Pokes

Vol. 9. ATARI ST Basic Training Guide
Vol.10. ATARI ST Introduction to Midi Programming
Vol.11. ATARI ST BASIC to C
Vol.12. ATARI ST 3D Graphics

All of the above have their listing on an optional disk. Abacus also produces the following products for your ST enjoyment;

PC BOARD DESIGNER - interactive CAD package for printed circuit board layout
POWERLEDGER ST - a Spreadsheet/Graphics package
CHARTPAK ST - professional-quality charts and graphs
DATARETRIEVE - a database management package
TEXTPRO - a wordprocessing package
PAINTPRO - design and graphics software
PAINTPRO LIBRARY #1 - fonts and clipart
FORTH/MT - powerfull multitasking language
ASSEMPRO - amchine languiage development system

FIREBIRD LICENSEE
Box No 49
Ramsey, NJ 07446
(201) 934-7373

If there is one company that has consistently acheived excellance, both in originality and develpment, Firebird Licensee gets my vote - from the superlative accolades of STARGLIDER (even Tripp Hawkins like this one - he hired the developer) to THE PAWN, which in this author opinion, sets the standard by which all graphically-oriented adventure games must now be judged.
Here is a line-up of present releases;

STARGLIDER - air to air & ait to ground combat flight simulation with digitized sound.
THE PAWN - a rare species of illustrated interactive fiction
THE GUILD OF THIEVES - steal yourself a world of fantasy (same author PAWN)
GOLDEN PATH - an animated tale of the mysterious East, drawn from Chinese mythology.
KNIGHT ORC - a graphic fantasy in three parts
THE ADVANCED OCP ART STUDIO - a comprehensive, user friendly art and design program
TRACKER - tactical remote assault corps vs. cycloid with Artificial Intelligence resistance
THE SENTRY - Set in 10,000 surreal landscapes-stradegy game
JEWELS OF DARKNESS - a collection of classic adventures including Colossal Adventure, Adventure Quest, Dungeon Adventure, & Jewels of Darkness.
SILICON DREAMS

FIRST BYTE
2845 Temple Avenue
Long Beach, CA 90806
(213) 595-7006

On the educational front, First Byte, who coin themselves as the world leader in software speech technology, combine learning with synthesized speech in their 'Building Blocks' and 'Notebook' software series.

FIRST SHAPES - concepts of geometric forms & shapes
KIDTALK - read, write & communicate ideas (talking word processor)
SPELLER BEE - master spelling skills through a tutorial, simulated test, & exciting word games
MATHTALK - solve basic addition, subtraction, multiplication, division problems

MIGRAPH
720 S. 333rd St., Suite 201
Federal Way, WA 98003
(206) 838-4677

This is one of my favorite companies, because, not only do they create excellent products, listen to their consumer base and keep on improving their existing releases with meaningful upgrades, but I find myself using FAST, LABELMASTER ELITE,and EASY DRAW each and every day. High Praise indeed.

EASY DRAW - object oriented drawing program; excellant desktop publishing program
FAST - all purpose desk accessory (can't live without it)
LABELMASTER ELITE - all purpose mailing label and disk label maker
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24-PIN DRIVER - use with NEC P, STAR NB, and EPSON LQ - Swiss Font
HP LASER PLUS and POSTSCRIPT DRIVERS

NEW WORLD SOFTWARE
1654 San Tomas Aquino Road
San Jose, CA 95130
(408) 866-5003

New World Software produces MULTI-MANAGER, which is a point-of-sales accounting program for the ST. Created with dbMan, it is menu based and will help manage a small to medium size retail or wholesale business. Even supports multiple store locations.

SSI (STRATEGIC SIMULATIONS, INC.)
1046 N. Rengstorff Avenue
Mountain View, CA 94043-9986
(415) 964-1353

SSI has ported over and enhanced (both in graphics and animation) several of their excellant strategy and role-playing games to ST.

PHANTASIE I - 1985 Best Role-Playing Game (Family Computing)
PHANTASIE II - sequel to above
PHANTASIE III (THE WRATH OF NICKADEMUS) - final confrontation
ROADWAR 2000 - 1986 Best Strategy Game (Computer Entertainer)
COLONIAL CONQUEST - 1985 Best Game of the Year (Family Computing)
WIZARD'S CROWN - 1986 Best Role-Playing Game (Family Computing)
RINGS OF ZILFIN - fully animated, graphics, fantasy adventure
SHARDS OF SPRING - newest role-playing adventure

Look forward to the release of GETTYSBURG -THE TURNING POINT, the 1986 Strategy and Tactics Game of the Year (Family Computing). This author is deep into RINGS OF ZILFIN at present and I'm enjoying it tremendously.

TRUE BASIC INC.
39 South Street
Hanover, NH 03755
(603) 643-3882

From the creators of the programming language BASIC, John G.Kemeny and Thomas E. Kurtz, comes True BASIC for the Atari ST. True BASIC is a structured language system which offers portability and speed, while utilizing a superior GEM interface than does ST Basic. Fast becoming my programming language of choice. Stewart Chapin and Dave Pearson of True BASIC inc recently presented True BASIC at a J-BUG General Meeting. Additional packages include...

SORTING AND SEARCHING
ADVANCED STRING LIBRARY
MATHEMATICAL TOOLKIT
3-D TOOLKIT (coming soon)

Look for several of these products to be reviewed in future J-BUG Newsletters. I hope the above has something for everyone.

DTACK GROUNDED

While referring to basic there is yet another one on the block. DBASIC from Dtack Grounded. Dtack has revolutionized advertising in their approach to marketing this product. They sent out 5,000 free copies of their manual with disks and included sheets of copyright labels to several user groups. We received 60 and they are all gone folks. I should say the manuals are all gone. We can make hundreds or more copyright disks for sale. They hope to make their money on upgrades and manuals. This is a very fast, non-TOS resident BASIC. For more information, including price of disk, give Dave Sheibley a call at (617) 697-2723.

NEED FOR EDITOR

I can't stress enough the need for an editor for J-BUG. With all the responsibilities of running this group, I find that putting together a newsletter too taxing a responsibility. Of course, I don't expext an 80 page newsletter every month, but we have an incredible source base. Hopefully, we will have an ST at the Resourse Center soon, and with the Laserwriter capability, what else do you need. Please call me if you would like to volunteer for this very rewarding job, with at least a one year committment.

BCS ATARI BBS

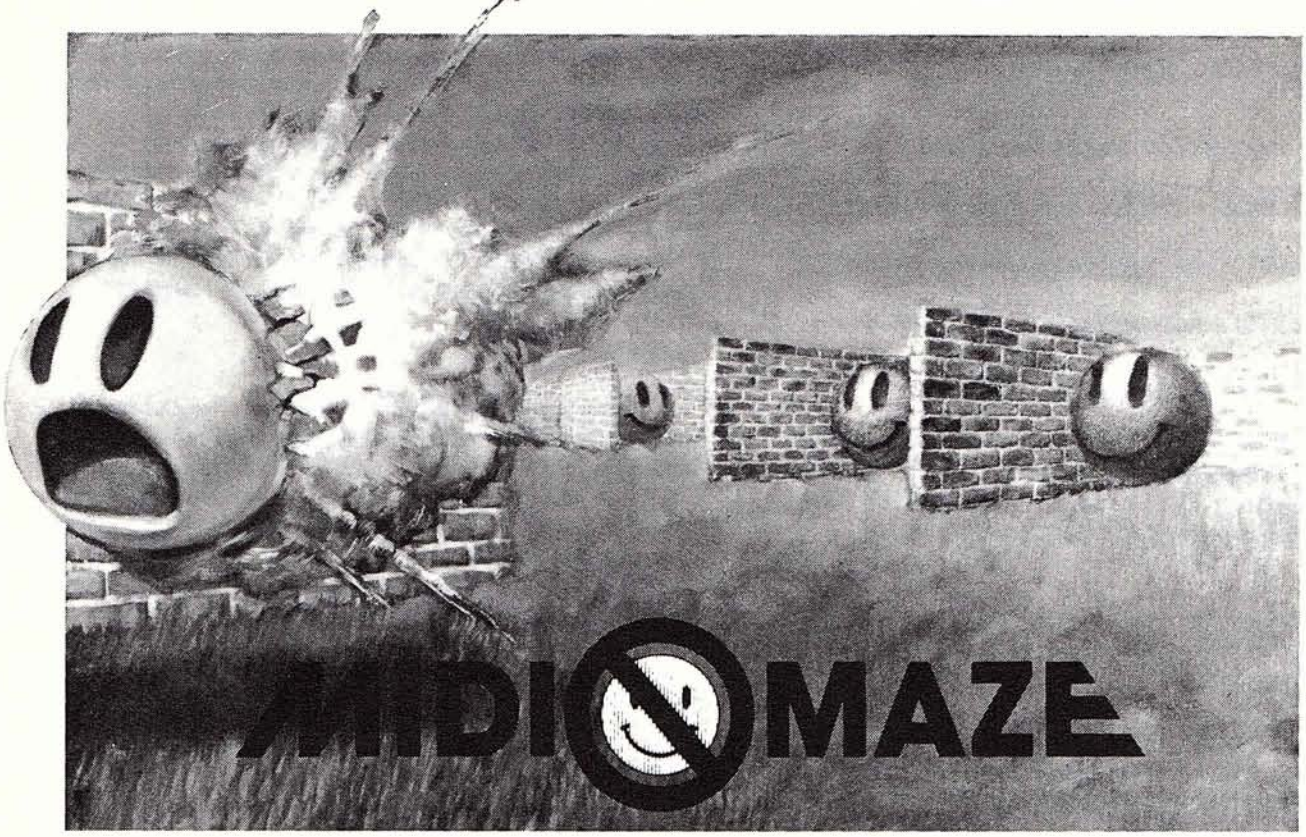
Harry Steele, our bulletin board SysOp, has changed our 8-bit system to a one megabyte upgraded 520ST, Astra 20 megabyte hard drive, and Michtron software (version 2.10). Harry is still learning the software, so it isn't fully up to snuff,but will be soon. I have given Harry over 4.8 megabytes of arced files for downloading. Remember that changing of SIG is important in using the system properly. A special thanks to Kevin Champagne, the SysOp of Neponset Nite-Lite BBS (8-bit board # 617-825-1594) and Harbor Lite BBS (ST board # 617-929-8678), for all the time and assistance in helping Harry set up our system.

TONI ROSSETTI

As most are well aware, FREEPORT SYSTEMS of Quincy, Mass has been closed for several months. FREEPORT was an Atari-only store, and its owner, Toni Rossetti, as one of the most knowedgeable people in the Atari community. Toni is known for his handywork in building hard drives and his Freeport bulletin board system, as the best in New England. Toni has moved home to Ohio, and undergone several heart operations - one rumor has it that one doctor said he only had a month to live without surgery. I have just heard that Toni will be undergoing yet another operation about AtariFest time. I would like to wish Toni all the best of luck in this operation, a speedy recover and good health in the future. Hang in there Toni.

****
* STACI - I LOVE YOU - DADDY *
****

Kill
~~Put on~~ a Happy Face!



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EDITOR'S PAGE
by
Alan M. Glick

I would like to dedicate this issue to all the User Group Newsletter Editors who consistently put out newsletters. I would specifically like to point out an Atari legend, Joe Waters, the editor of CURRENT NOTES. CN is still the best user group newsletter for any computer in the world today. I don't know how he does it every month, but I'm glad he does.

If there is something this newsletter has is diversity, in fact I think I'll coin it 'intense diversity'. I hope there is something for everyone and a lot of it. Let's take a look'see at what we offer in this issue. In FEATURE ARTICLES we start off with a telecommunications article by John Purbick. Probably the largest selling modem, for the knoweldgable end-user that is, for the last year, has been the Avatex. The one negative feature of the Avatex is that it lacks sound. I appreciate listening to the busy signals instead of having to wait for the 'no carrier' to appear on screen. Well, thanks to John your ears will ring again. John has developed a procedure to add sound to your Avatex, and he includes diagram and all in AVATEX SPEAKER SYSTEM. We also have two excellant Fractal programs to entertain. The first, THE NEW AND IMPROVED, by Allan Chan, and the second MANDLEBOX by Allen King. I've included Allan source code, while both are in our Public Domain Library. Not to be outdone, this author, Alan Glick's first project with True Basic will be to create a Mandlebox/Fractal program. It must be something in the name (Alan, Allan, Allen).

COMMENTARY feature a short article by Michael Schrage on how the FCC may be passing a rule that will increase our cost to on-line services.

As many newspaper readers immediately go to the comic strips, many computer hobbyists (don't you like hobbyist better than user) find themselves turning to the reviews. Well, let the vendor beware - reviews in J-BUG can make or break a product. Our REVIEWS this issue include 1) CRYSTAL - a desk accessory marketed by Antic, and reviewed by David Sheibley. With over thirty desk accessories in our public domain library, the purchase of desk accessories becomes a serious investment, due mainly to availability and memory consumption. More on this later. Look for future reviews on FAST from Migraph, MAXPAK from Softwerx, and DESKCART from Q.M.I. 2) TYPING TUDOR & WORD INVADERS by Academy Software, reviewed by Jane Ricard. I must admit I am biased to this product. I spend 2-3 hours every week using it. We have two language reviews next. The first 3) GFA BASIC - marketed by Michtron, and reviewed by Don Peters. A good portion of his article first appeared in the Acton-Boxborough User Group Newsletter. Some of the finest public domain games were done using GFA Basic, including 'Wheel of Fortune' and 'Monopoly'. Stewart Chapin and David Pearson of True BASIC inc. demonstrated TRUE BASIC at our July 16 General Meeting. I've been using TRUE BASIC and it is a very fine product. 4) PRO FORTRAN-77 - marketed by Prospero Software, and reviewd by John Faber. John gives an in-depth review of this product. Two hot products in the desktop publishing market are now scrutinized. 5) PUBLISHING PARTNER - marketed by SoftLogik, and reviewed by Walter Lau, and 6) EASY DRAW 2.0 - marketed by Migraph, and reviewed by Loren Miller. You can't go wrong with either of these products, and both companies are constantly inproving their product with upgrades and functionalities. The future looks bright.

I know I'm going to be critisized for the section I'm calling ATARI TRADE SHOWS. I just feel that since we haven't put out a newsletter in a while that the membership should have documented what Atari has been doing the last six months. I find it fascinating reading. Probably the most interesting is the CEBIT report from Germany. Europe always seem to get everything first. Besides, you can now compare it to our Northeast Atari Computer Fair.

Our SIG REPORTS follows with reports from our Pascal SIG (John Williams), our Basic SIG (Eric Bryan), and our Logo SIG (Jerry Feldman & Erric Solomon).

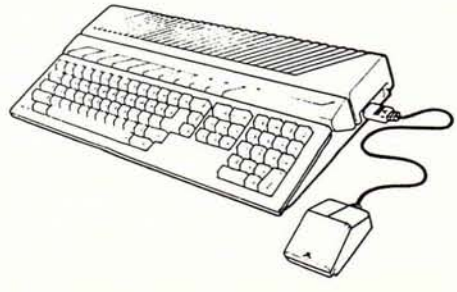
The DEVELOPER'S CORNER includes not only Greg Hauser's continuing series (this issue Integrating 68000 Code with C) and Part II of Tim Oren's Professional GEM series, but welcomes an article by Stephen Mehalek on Initializing a GEM program.

Well, that's it for this issue. Hope you enjoy it. Don't forget the NORTHEAST ATARI FAIR ** OCTOBER 10 - 11 ** WORCESTER CENTRUM **

Current Notes, Inc.
122 N. Johnson Road
Sterling, VA 22170

(Ed. Don't be confused by the full page ATARIFEST '87' add from the Washington area, which is being reciprocated.)

** STACI ALISON - I LOVE YOU **



AVATEX SPEAKER SYSTEM
by John Purbick

This is the revised circuit for a switched sound system for an Avatex 1200 modem. This add-on device allows you to listen to the sounds on your telephone line as you attempt to make a call, but once a connection has been made and the carrier is received, the sound system will shut off automatically. The earlier version of the circuit, formerly posted to the JBUG bbs, is perfectly valid, but this setup is slightly simpler in construction.

OK, first thing to do is remove the cover from your Avatex 1200. Take out 3 Phillips screws from the underside, 2 near the front and one at the back. Then gently pry out the sides of the top half of the modem's shell, one side at a time. This will allow the two halves to separate. Complicated, huh? If you're no longer interested, replace the cover.

If you're feeling intrepid, orient the modem so the front faces you. Look to the left of the three control buttons; there will be 5 resistors there side by side. The leftmost one is labelled 'R21'. It is the series resistor for the MC light, and we will use it to obtain a signal with which to switch the sound apparatus. Note that at the end of R21 farthest from the front of the modem there is an area of metallization on the board which connects both R21 and its neighbor. Get a small PNP transistor (2N2907 or 2N3906 are cheap and work fine). Make a short (.1 inch) bend in the end of the emitter lead and lay this part of the lead onto the above-mentioned metallized area. Solder it in place. Now bend the base lead of the transistor slightly toward you. Using a similar technique to the one used for the emitter, clip one wire of a 3.3K resistor to .5 inch length, and solder it to the other end of R21. Clip the other end of the resistor short, and cross it over the transistor base. Solder them together. Now, whenever current flows through R21, it will also pass through the 3.3K resistor and the emitter-base junction of the transistor, turning it on.

There are two more connections to make.

About two-thirds of the way towards the back of the unit there is an 8-pin integrated circuit, an RCA458N, labelled U27. Pin 1 of this chip is the audio signal, and we can tap it here. (Pin 1 is to the right rear as the modem faces you.) Solder a fine wire to this point, being careful neither to create solder bridges to other pins nor to cook the RCA458N. If you can't make the connection in a couple of seconds, let the chip cool down before trying again. The last connection is a ground lead, and can go to any number of places, but one sure connection point is the center lead of one of the voltage regulators--these sit on heat sinks at the right hand side of the board. Again, don't cook the regulator while soldering.

Finally, bring in the switched power supply to your circuit from the collector of the PNP transistor. And that's it!

Circuit notes:

Use as small a speaker as you can find: I used one I got a while ago at Eli's (Solid State Sales) and I think it came out of a set of earphones. Don't expect sound quality to be very good, but you should hear the busy signal and sound of dialling quite clearly, and also the roaring sound of the carrier, before the connection is established. You can test the setup by dialling your own number (always busy) or 1-[your number] which gives you boop-bup-beep and recorded sorrow ("We are unable to complete your call....etc"). All the components except the resistors are available at Solid State Sales (139 Hampshire St, Cambridge); you can substitute other op-amps but the TL064 is a FET-input type that operates on a 5v supply--not many op-amps will do this.

Note that the output is clipped to .6v from ground by the two 1N914's. This is necessary because the tones used in dialling sound extremely loud if played at the same volume as received signals. The diodes limit the volume of these tones while allowing as much gain as possible for the other sounds.

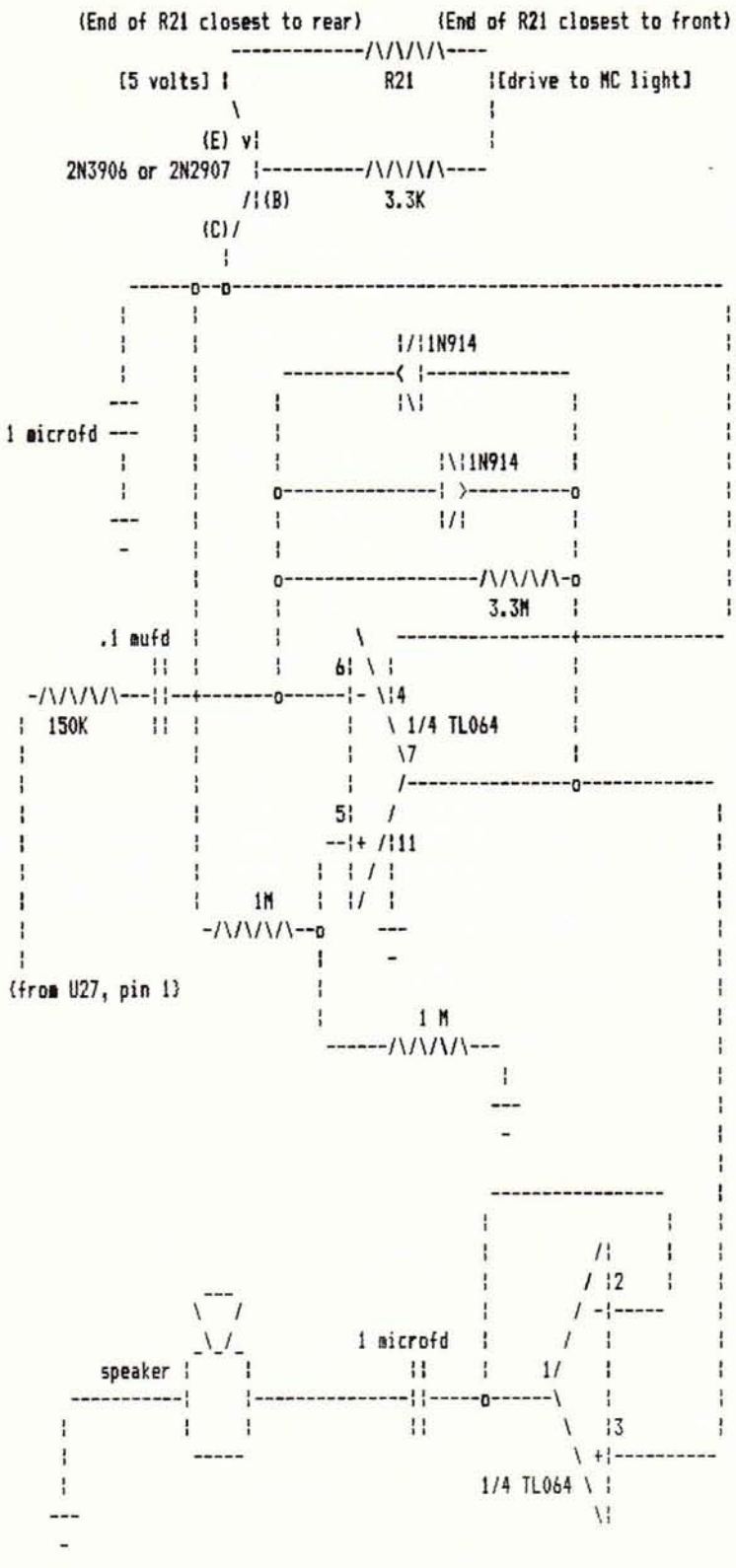
Mounting:

Look at the way the pushbuttons are mounted inside the modem. They fit inside a metal frame, and this has "ears" at each side with a hole in each. You can cut a long, narrow piece of perfboard which will fit verticlly, across the front of the modem, and bolt it to these two holes for support. I used this arrangement, the board being .6 inches by 4.9 inches. Naturally, there must be a large cutout in the board to clear the switches, but there is plenty of space left over for the circuit. My speaker hangs off the left hand end of the board, and I drilled a 3/16 diameter hole in the modem case to let the sound out; this works well because the speaker is just behind this hole, near the case's left front corner.

It would be possible, but not as easy, to run the device off the 12v supply which would allow more output power to the speaker. You can also connect the output to an external amplifier, which I have tried successfully.

--jp

Here is the circuit:



NOTE THAT o MEANS CONNECT AND + MEANS CROSSOVER WITHOUT CONNECTION!

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For more info or to order call:
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NEW AND IMPROVED.....
A fast and pretty Mandelbrot program for the ST.
by Allan Chan

This fractal program of the Mandelbrot Set serves as a benchmark program for work with floating point harware. Special effort was made to optimize the drawing routine so that I might not grow old and grey waiting for a finished map.

When you run the program, it prompts you for the parameters of the map.

The first prompt is: " Enter Real Center."
You must enter a real value; the program will bomb if you enter an integer.

The second prompt is: "Enter Real Range."
This range is in respect to the X axis and the Y axis will be scaled accordingly. Also be sure to enter a real value.

The third prompt is: "Enter Imaginary Center."
Enter a real value for the imaginary center.

The forth prompt can be tricky: "Enter color offset."
This prompt lets the user to best use the 16 colors in low resolution mode. Assuming that you have had experience playing around with Mandel-brot Set, the different regions of color indicate different iteration numbers to reach the value of 2.0. If you delve deeply into the map, you do not care about the outer regions, but those regions will be normally assigned colors. Those colors will be "wasted". The color offset allows you to compress the 16 color into the regions you are investigating. The program expects a cardinal number (positive integer).

The fifth prompt is: "Enter Resolution (1,2,3,4...)."
This allows the user to adjust the interation limit per pixel.
The iteration limit, IL, is expressed by this equation:

IL(n)= Resolution*15 + Coloroffset.

Of the Mandelbrot programs I have seen for the ST, this is the fastest and the prettiest. A typical map with a resolution of 1 takes under 10 minutes. The color spectrum follows the rainbow from deep purple to red.

I was too lazy to learn to program drop down menues. The program finishes by ringing a bell. After which, the user can enter additional commands.
The commands are:

"s" save the picture to a DEGAS format which you can later view and edit" with DEGAS.

"t" tells you the time required for this map. Good for benchmarking.

"c" tells you the coordinate of the map.

"a" a pointer appears with which you can define another region. The region is scaled in reference to the Y width of the rubber box. After you let go of the mouse button, the program asks you to enter the color offset and resolution.

"q" this allows you to quit the program. an additional "." is require to return to the desktop.

Here are a few interesting regions of the map:

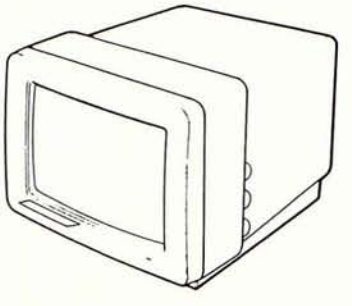
Real Center	Real Range	Imaginary Range	Color Offset	Resolution
-.75	3.2	0.0	0	1 or 2
0	0.25	0.32	7	2 to 7
-0.97889	0.000583	0.2728785	10	5 to 10

For further fun points, find them yourself!

This program has its roots in the Mandelbrot Program written by Tom Hudson for the January 1986 Analog Computing. Also this program was coded in Modula-2 by TDI. If you are interested the source code, leave me a message on the BCS J-BUG bulletin board.

Have fun!!!!!!!!!!!!!!

(Ed. Allan is a student)



```
MODULE FRACTALS;

FROM SYSTEM IMPORT  ADDRESS, ADR ;

FROM VDIInputs IMPORT HideCursor, ShowCursor;

FROM VDIControls IMPORT OpenVirtualWorkstation, CloseVirtualWorkstation,
                        ClearWorkstation;

FROM AESGraphics IMPORT GrafRubberBox, GrafMouseKeyboardState, GrafMouse,
GrafHandle;

FROM TextIO IMPORT WriteString, WriteLn, ReadReal, ReadCard, WriteInt,
                   WriteReal, WriteCard;

FROM Terminal IMPORT Read, BusyRead;

FROM GEMVDIbase IMPORT VDIWorkInType, VDIWorkOutType, CtrlArrayType,
                       PxyArrayType;

FROM VDIAttribs IMPORT SetMarkerType , SetMarkerColour;

IMPORT TextIO;

FROM VDIEscapes IMPORT EraseToEOL ,CursorAddress;

FROM GEMDOS IMPORT Create, Write, Close, ConIn, ConOut, SetTime, GetTime,
Open;

FROM BIOS IMPORT BConStat, BConIn, Device;

FROM XBIOS IMPORT Palette ,SetColour, SetPalette, ScreenPhysicalBase;

FROM VDIOutputs IMPORT PolyMarker;

FROM AESApplications IMPORT ApplInitialise;

(************************************)

VAR
GR1, GR2, GR3, MX,MY,KS,MS,  LW, LH, GR4:INTEGER;
CXC,CXR,CYC,LXC,LXR,LYC,TMX,TMY,TLW,TLH:REAL;
LINTIN: VDIWorkInType;  LOUT: VDIWorkOutType;
COUNT, CLIMIT, PCOLOR, TIME,FILECOUNT,FIX,MINUTE, SEC, MODE, LOWCOLOR
:CARDINAL;
XP, LOWHEAD, YP, MARKER , APHANDLE :INTEGER;
TEMP:REAL;
CONTROL:ARRAY[1..12] OF INTEGER;
INTIN, PTSIN, INOUT:CtrlArrayType;
OLDPAL, PALETTE , COFSET : Palette;
PLOT:PxyArrayType;
HANDLE, WHAND,  ALLDONE:INTEGER; CHSTADRIV ,T:BOOLEAN;
ASCA, ch :CHAR;
X,Y,XS,XE,XSTEP,YS,YSTEP,YE,AT,BT,AZ,BZ,AC,BC,SIZE,TSIZ,RRANGE,IRANGE:REAL;
SQIN, SQOUT:REAL;
TADDR:ADDRESS;
FNAME:ARRAY [0..12] OF CHAR;
(************************************)
```

```
PROCEDURE INIT;

BEGIN

LOWHEAD:=0;


    PALETTE[0]:=1774; PALETTE[1]:=667; PALETTE[2]:=668; PALETTE[3]:=13;
    PALETTE[4]:=31; PALETTE[5]:=69; PALETTE[6]:=75; PALETTE[7]:=730;
    PALETTE[8]:=1387; PALETTE[9]:=1787; PALETTE[10]:=1776; PALETTE[11]:=770;

    PALETTE[12]:=1800; PALETTE[13]:=1560; PALETTE[14]:=1450;
PALETTE[15]:=000;

    COFSET[0]:=0; COFSET[1]:=2; COFSET[2]:=3; COFSET[3]:=6;
    COFSET[4]:=4; COFSET[5]:=7; COFSET[6]:=5; COFSET[7]:=8;
    COFSET[8]:=9; COFSET[9]:=10; COFSET[10]:=11; COFSET[11]:=14;
    COFSET[12]:=12; COFSET[13]:=15; COFSET[14]:=13; COFSET[15]:=1;
END INIT;


(************************************)


PROCEDURE STARTUP;
  VAR
 I:CARDINAL;

BEGIN

APHANDLE:=ApplInitialise();

HANDLE:=GrafHandle(GR1, GR2, GR3, GR4);
FOR I:=0  TO 9 DO
    LINTIN[I]:=1;
    END;

LINTIN[10]:=2;
OpenVirtualWorkstation( LINTIN, HANDLE, LOUT );

FOR I:=0 TO 15 DO
    OLDPAL[I]:=SetColour( I, -1 );
    END;

END STARTUP;
(**********REAL NUMBERS************)

PROCEDURE KEYBRD;

BEGIN

CursorAddress(HANDLE,0,1);EraseToEOL(HANDLE);
WriteString(" ENTER REAL NUMBER CENTER. ");
ReadReal( XS ); CursorAddress(HANDLE,0,1);EraseToEOL(HANDLE);
WriteString(" ENTER REAL NUMBER RANGE. ");
ReadReal( RRANGE );
XS:= XS - (RRANGE/2.0);
XE:= XS+ RRANGE;
```

```
(************ FAKE NUMBERS **********)
CursorAddress(HANDLE,0,1);EraseToEOL(HANDLE);
WriteString(" IMAGINARY NUMBER CENTER. ");
ReadReal( YS );
YS:= YS- RRANGE*0.77/2.0;
YE:= YS+ RRANGE*0.77;
CursorAddress(HANDLE,0,1);EraseToEOL(HANDLE);
WriteString("ENTER OFFSET NUMBER. ");ReadCard(LOWCOLOR);
WriteString("ENTER RESOLUTION NUMBER (1,2,3,4...)");
ReadCard( MODE );
CLIMIT:=((MODE*15)+LOWCOLOR);
LW:=1;
END KEYBRD;


PROCEDURE MAP;
(*** PROCESS THE PIXEL MAP ********)
VAR
BEGIN
XSTEP:=(XE-XS)/320.0;
YSTEP:=(YE-YS)/200.0;
FIX:=(MODE-1)-LOWCOLOR;
HideCursor(HANDLE);
ClearWorkstation(HANDLE);
SetPalette( PALETTE );
TIME:=0;
SetTime(TIME);
Y:=YE; YP:=0;
WHILE  ( YP<200 ) DO; (** PIXEL **)
XP:=0;  X:=XS;
       WHILE  ( XP<320 ) DO
       AZ := 0.0;
       BZ := 0.0;
       COUNT:=0; SIZE:=0.0;
              WHILE ( COUNT <= CLIMIT ) AND ( SIZE < 4.0 ) DO;
              AT:=AZ;
              AZ:=AZ*AZ-BZ*BZ+X;
              BZ:=AT*BZ*2.0+Y;
              SIZE:=AZ*AZ + BZ*BZ;
              INC (COUNT);
              END;
       IF COUNT > LOWCOLOR THEN
         PCOLOR:=(COUNT+FIX)DIV MODE;
           IF PCOLOR>15 THEN
              PCOLOR:=15;
              END;
       ELSE PCOLOR:=0;
          END;
       MARKER:=SetMarkerColour( HANDLE, COFSET[PCOLOR] );
       PLOT[0]:=XP; PLOT[1]:=YP; PolyMarker( HANDLE, 1 , PLOT );
        X:= X+XSTEP; INC (XP);
       END; (***INNER WHILE LOOP****)
 INC (YP); Y:=Y-YSTEP;
 END;
GetTime(TIME);
LXC:=CXC;LXR:=CXR;LYC:=CYC;
CXC:=(XE+XS)/2.0;CXR:=XE-XS;
CYC:=(YE+YS)/2.0;
ch:=CHR(07);
TextIO.Write(ch);
```

```
TextIO.Write(ch);
TextIO.Write(ch);
END MAP;

PROCEDURE TIMER;
BEGIN

TEMP:= FLOAT( TIME )* 1.88;
MINUTE:= TRUNC(TEMP/60.0);
SEC:= CARDINAL(TEMP) MOD 60;
CursorAddress(HANDLE,0,1);
WriteString("TIME: ");
WriteCard(MINUTE,3);
WriteString(": ");
IF SEC<10 THEN
   WriteCard(0,1);
   WriteCard(SEC,1);
ELSE
   WriteCard(SEC,2);
   END;
END TIMER;


PROCEDURE MOUSE;
BEGIN
MS:=0; KS:=0;
ShowCursor(HANDLE,0);
GrafMouse(0,NIL);
WHILE (MS=0) AND (KS=0) DO
  GrafMouseKeyboardState(MX,MY,MS,KS);  END;
IF KS=0 THEN
  GrafRubberBox(MX,MY,3,2,LW,LH);
  TMX:=FLOAT(CARDINAL(MX));
  TMY:=FLOAT(CARDINAL(MY));
  TLW:=FLOAT(CARDINAL(LW));
  TLH:=FLOAT(CARDINAL(LH));
  YE:=YE-TMY*YSTEP;
  XS:=XS+TMX*XSTEP;
  YS:=YE-(0.625*TLW*YSTEP);
  XE:=XS+TLW*XSTEP;
  CursorAddress(HANDLE,0,1);
WriteString("ENTER OFFSET NUMBER. ");
ReadCard(LOWCOLOR);
WriteString("ENTER RESOLUTION NUMBER(1,2,3,4...)");
ReadCard( MODE );
CLIMIT:=((MODE*15)+LOWCOLOR);
  END;

END MOUSE;

PROCEDURE KEEP;
VAR
 L:LONGCARD;
 TEMPADDR:ADDRESS;
BEGIN
FILECOUNT:=FILECOUNT+1;
FNAME[0]:="F";
FNAME[1]:="R";
FNAME[2]:="A";
FNAME[3]:="C";
```

```
FNAME[4]:="T";
FNAME[5]:="A";
FNAME[6]:="L";
FNAME[7]:=CHR(FILECOUNT);
FNAME[8]:=".";
FNAME[9]:="P";
FNAME[10]:="I";
FNAME[11]:="1";

Create(FNAME,1,HANDLE);
Open(FNAME,0,HANDLE);
TEMPADDR:=ADR(LOWHEAD);
L:=2;
Write(HANDLE,L,TEMPADDR);
TEMPADDR:=ADR(PALETTE);
L:=32;
Write(HANDLE,L,TEMPADDR);
TEMPADDR:=ScreenPhysicalBase();
L:=32000;
Write(HANDLE,L,TEMPADDR);
STARTUP;
END KEEP;

BEGIN

FILECOUNT:=64; (*USED FOR NAMING FILE*)
INIT;
STARTUP;
KEYBRD;
KS:=0;
WHILE KS=0 DO
 MAP;
 LW:=0;
 WHILE LW=0 DO
  REPEAT
   BusyRead(ch);
  UNTIL (ch="s") OR
        (ch="t") OR
        (ch="m") OR
        (ch="q") OR
        (ch="k") OR
        (ch="c") OR
        (ch="l");
   CASE ch OF

   "s":KEEP; |
   "t":TIMER;|
   "m":MOUSE;|
   "q":KS:=1;LW:=1;|
   "k":KEYBRD;|
   "l":CursorAddress(HANDLE,0,1);
       EraseToEOL(HANDLE);
       WriteString("LR CNT=");
       WriteReal(LXC,6,5);
       WriteString(" LR RNG=");
       WriteReal(LXR,6,5);
       WriteString(" LI CNT=");
       WriteReal(LYC,6,5);|
   "c":CursorAddress(HANDLE,0,1);
       WriteString("R CNT=");
       WriteReal(CXC,6,5);
       WriteString(" R RNG=");
       WriteReal(CXR,6,5);
       WriteString(" I CNT=");
       WriteReal(CYC,6,5);|
   END; (*CASE*)
 END;
END;
REPEAT
 BusyRead( ch );
 UNTIL ch=".";
SetPalette(OLDPAL);
END FRACTALS.
```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---> FRACTILE MATH:

Mandlbox displays the value of M(c) over a region of c and plots its value as a color on the screen. M(c) is the function which returns the number of times one has to iterate on z = z*z + c (starting at z=0) until the magnitude of z is greater than 2. And by the way, c and z are imaginary numbers. On the screen, the imaginary part is plotted horizontally the real part vertically, and the number of iterations determines the color.

See the August 1985 issue of Scientific American for more details.

---> ZOOMING:

M(c) has the interesting property that in certain areas it becomes very wrinkley, just like sin(1/x) does at x=0. Its interesting to zoom in on these areas.

To define a sub-area of the screen to zoom into, down-click on one corner of the desired region and drag the mouse to form the desired rectangle. Clicking inside the rectangle will cause Mandlbox to expand the area in the rectangle to full screen. Clicking outside the rectangle will remove it. The approximate magnification of the window is shown at the upper left.

The good news is that Mandlbox displays a low resolution picture first, and allows you to select another area to zoom in on even before the current image has been completed. The bad news is that because the Mandlbox program is computing much of the time, it only polls the mouse occasionally. (when the arrow flashes) Especially at high magnifications, it may be necessary to wait one flash between each of the mouse actions: down-clicking, dragging to form a box, letting up, and then clicking in the center. (Oh, for multiple user processes, which would allow much more interactivity. If any one knows another way around this one, let me know.)

---> MENU FUNCTIONS:

The other functions of the program are as follows:

ZOOM

OUT 4X --	Draw M(c) zoomed out 4x in each dimension. The center of the screen remains the same.
UNDO LAST ZOOMIN --	Mandlbox maintains a stack of 50 zooms since the start or last DEMO selection (see below). This reverts to the previous scene.
NUMERICALLY --	Displays the location and size of the current window, in real and imaginary parts. Editing these numbers will move the display. (See Caveat B)

COLOR

ROTATE COLORS --	The usual color lookup hack, but none the less quite catchy.
SHOW CALC BOXES --	Displays the calculation boxes (see below) on the screen. Try it once or twice.

ALGORITHM

ITER MAX --	Sets the maximum number of times that M(c)

will iterate testing for |z|>2 before it gives up. 256-512 work well, things slow down above that. (See Caveat B)

DEMO - Various pretty spots I've found in my perusing, and named just for yucks. Try these first.

---> Whats new about MandlBOX that's not just your every-day MandelZOOM?

Mandlbox displays a low-resolution image first so that you can see roughly where you are. Before its added full resolution, you can zoom into a sub-area. This is particularly helpful if you know where you're headed.

Low resolution first is acomplished using a fat-bits like technique: A whole square (a "box" a power of 2 pixels on each side) is drawn using the value from only one calculation -- that of the pixel in the upper left hand corner. Later the square is divided in quarters. The values of only three new points must be calcualted, since one is the same as the undivided square.

Some areas drawn are remarkably constant, and Mandlbox takes advantage of that to reduce the amount of calculation required. As a box is about to be divided in quarters, all of its neighbors are examined and if they are all the same color, Mandlbox just doesn't bother dividing it. This algorithm works because the Mandelbrot set is connected, and provides a speedup of a factor of 1.3 to 5. Watch the meter on the upper right corner of the window. It shows the percentage of all the pixels on the screen which have been calculated.

---> SOME TIPS:

1) Mandlbox works best and possibly only on a 16-color low resolution screen.

2) Mandlbox works well on a 520ST with TOS in ROM, providing there isn't a RAMDISK around. (The array required to hold unsplit boxes is big.)

3) If as you zoom in, the areas bordering solid black become "funny" looking, (with extra black areas) try upping the iteration count.

4) Zooming in too far will yield fuzzy pictures. Actually this is because of the inacuracies of the mantissa of single precision floating point. It happens at magnifications above 500,000.

5) Caveat B (above): For some reason, GEM's FORM_DO doesn't erase the characters viewed on the screen when one does <esc>, <bs>, or <del>. They are actually erased, but you just see extra on the screen. I didn't want to delay release for this one, plus I'm listening if any of you have successfully done battle with this one!

---> In The Works:

Many improvements are contemplated, but I wanted to get something out before I got sidetracked. I want to add a scene save-restore to disk, caching demo scenes on the disk, pan and 2x zoomin/out without total recompute, zooms that rotate too, multiple windows with sizing, ordering computation by iteration_max (not just resolution), color histograms, and a movie/animation. If you enjoy using Mandlbox, sending me a few "atta-boy's" would help fuel these new extensions.

Also contact me if you have any other suggestions for neat extensions. If you want to take the ball and work on any of these (providing you are an Atari Developer) let me know.

Bug reports are encouraged. Be specific about exactly what causes the bug and what doesn't.

I am: Allen King 1-617-449-3359 evenings
30 Gibson St
Needham MA 02192

(Ed. Look for the MANDLBOX.PRG on the J-Bug Disk Subscription or on Disk #58 in the J-Bug Public Domain Library.)

REVIEWS

A Review of CRYSTAL
By David Sheibley

CRYSTAL is a desk accessory designed to supplement the desktop commands of the Atari 520 and 1040 ST. It also makes these commands available from within a GEM program, allowing the user to do almost any kind of file maintenance without having to exit the program. CRYSTAL works with both color and monochrome monitors and is supplied with resource files for both types allowing the icons used to look natural without the tall and thin effect seen on the medium resolution GEM desktop. When copying CRYSTAL to your boot disk, you just copy the correct resource file to the disk along with the accessory. If you're lucky enough to own both monitors merely put both files on the disk, CRYSTAL is smart enough to use the correct one for the monitor that is hooked up.

When you choose CRYSTAL from the accessory menu a large window appears on the screen containing ten icons along the top labeled ALL, NONE, FORMAT, TRASH, COPY, MOVE, PRINT, LABEL, MAKE, and ERASE. The current source and destination drives are displayed just below the icons and a directory of the source disk takes up the bottom half of the window. If the directory is too large to fit in the window you can use the scroll bar at the right to scroll up and down through it.

Before using most of the commands you must select the files or folders upon which you wish to perform the operation. It is possible to select files in a couple of different ways; you can click on the filename in the directory which turns it to bold type and displays a check mark next to the name, or you can double click on the source drive and a window will open allowing you to create a mask defining the files you want. For example, entering the mask *.ACC would select all files ending with the extender "ACC". Clicking on the ALL icon will select all of the files in the current directory while the NONE icon will deselect any selected files. A quick double click on a file will show its name, size, and creation time and date. You may also change a file's name through this method. Clicking on a folder name displays the contents of the folder and shows the pathname beneath the source drive. Included in the folder's directory are a single period and a double period. Clicking on the double period will take you back to the parent folder while the single period will immediately take you back to the root directory no matter how deep you are in folders.

The FORMAT icon allows you to format either a single or double-sided disk, you can assign a name to the disk before formatting if you wish.

The TRASH icon is used to delete selected files while the ERASE icon will delete a folder and its contents. Safety dialog boxes always appear before any destructive commands are performed.

COPY is used to make a duplicate of a file on another disk or in a different folder while the MOVE icon will automatically erase a file from the source disk after it is copied to the destination.

The PRINT icon is used to print a file to either the screen or the printer. You may choose to output all characters or just ASCII characters. When printing, you can define the page length along with headers and footers containing up to three lines of text each. Page numbering is also supported. When printing multiple files to the screen there is no way to abort quickly, you must hit QUIT for every file until they have all gone by. Needless to say if you mistakenly select ALL files and print you'll be clicking on QUIT for quite a while.

LABEL prints a directory to the printer in either normal print or in condensed print for making disk labels. You can choose to print from one to three columns and can change the one line header to whatever you wish. Unfortunately there doesn't seem to be any way to print a complete directory including folders, selecting ALL prints just the root directory and the folder names. To get a complete listing you must print the contents of each folder individually after printing the root directory.

Finally, the MAKE icon allows the creation of folders wherever you wish.

An installation program is included that allows you to change the defaults for PRINT and LABEL to work with whatever type of printer you are using along with changing headers and footers, number of label columns, and number of characters in a line. In addition, you can turn off the safety dialog boxes. This installation program modifies the accessory itself without making up a space-wasting configuration file.

Other than the problems already mentioned, and a strange propensity for screwing up the display if you try to cover the Crystal screen with another instead of closing it, everything works as it should. As a cost-cutting measure the documentation for Crystal comes on the disk but it is well done and prints out to only ten pages. Crystal takes up about 57k but it is well worth the memory lost; once you have this accessory installed you'll never have to quit a program to format a disk or move some files again. Crystal is a very useful utility and an excellent value.

CRYSTAL - $24.95
Antic Publishing
524 Second Street
San Fransisco, CA 94107
(800) 443-0100 x133

(Ed. Dave is a Motorcycle Systems Manager.)

Review of
TYPING TUDOR/WORD INVADERS
by Jane Ricard

As a fairly bright girl in high school I was determined to never end up as a secretary or waitress so I never applied for a job in a restaurant and refused to learn to type. If you know how to type you might get asked to help out on the job by typing something in a pinch, and when you've helped once you just might wind up doing a lot more typing. So spoke my paranoid, youthful self. If I was all thumbs on a typewriter that possibility would never present itself. Of course, I was in a jam when I really needed something typed well. Now that I've matured and want to be more productive on my computer I've decided that the danger of being turned into a secretary against my will is not so great. I thought about changing my keyboard to the more sane Dvorak version but, alas have not made any effort to do it. So, I decided it was high time to familiarize myself with QWERTY and friends. Fortunately there is a fairly painless way for me to accomplish my objective in TYPING TUTOR AND WORD INVADERS by Academy Software.

Typing Tutor has eight levels. In Level 1 you practice the "home" keys by copying three lines of letters. Each successive level adds more letters, numbers or symbols. If you make a mistake a red box surrounds the error and you get beeped. When you finish each practice session the screen displays the number of errors and your typing speed in words per minute. You proceed to the next page with four or fewer mistakes and a minimum typing speed of 10 W.P.M. When you complete each level you are tested and pass to the next level only with three or fewer errors. The interactive nature of the software keeps your eyes on the screen rather than cheating by watching the keys (as I am so prone to do). You have to be extremely careful to not let your fingers linger on keys because the game causes each key to repeat at the highest level of sensitivity and you can chalk up a lot of errors very fast. On the bright side, when you pass an exam you are treated to a short rendition of Pomp and Circumstance.

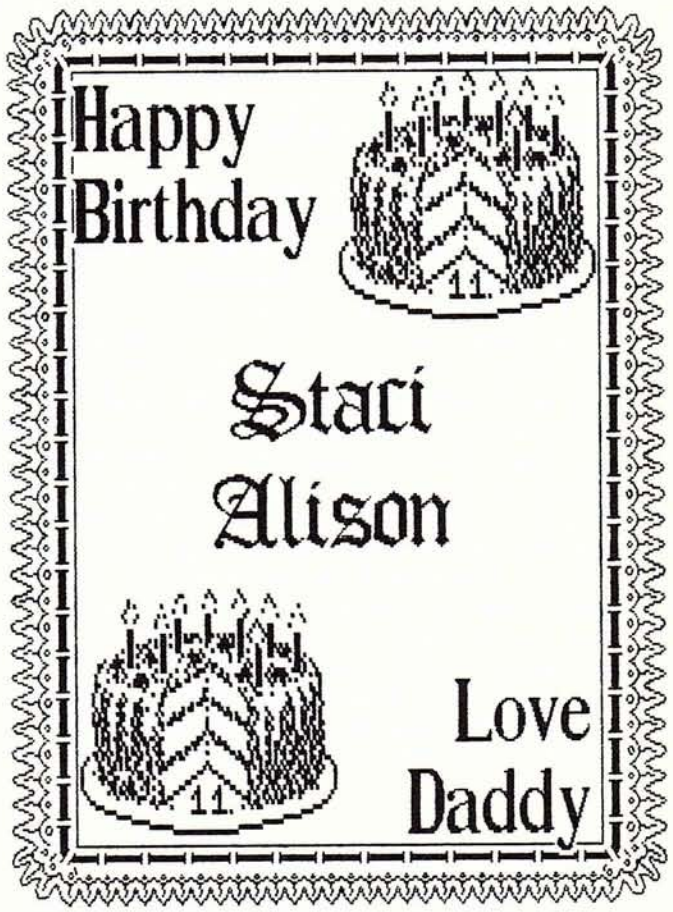
Once you finish Level 2 you are advanced enough to play Word Invaders. This is a fun game where you blast words out of the sky by correctly typing each letter. Mistakes cause the screen to flash but are not shown on the screen so you keep trying until you hit the right key. You want to blast all the invading words before they destroy your ground base. Your typing speed and score (based on number of errors) are displayed at the end of the game. The game is a great motivator to improve both speed and accuracy. You can win with typing speeds of twelve to eighty W.P.M. depending on how much of a head start you give the word invaders. My scores and speeds have increased regularly and practice is far from drudgery.

I'm pretty happy with both programs and am sure that I will eventually be a passable typist. My only complaint with this software is that there is no provision for returning to the desktop from it so you have to reboot when you finish playing. Why couldn't they have added this one last feature?

By the way, I did NOT touch type this review because I'm somewhere in the middle of Level 3 and can only do about half the alphabet now. Even though my speed is around forty W.P.M. I'm still unavailable for secretarial services!

TYPING TUDOR/WORD INVADERS ($34.95)
Academy Software
P.O. Box 6277
San Rafeal, CA 94903
(415) 499-0850

(Ed. Jane is a part-time CAD/CAM instructor.)



IMPRESSIONS OF GFA BASIC
by Don Peters

I've just had a chance to give a preliminary checkout of GFA Basic, and I LOVE it!! Here's a bit more background:

I enjoy doing program development in a responsive environment with good hardware and plenty of memory. The ST satisfies my hardware needs, and my 1 meg upgrade gives me all the memory I need. But my experience with ST Basic was not good. It is very slow, has bugs, and I find the human interface cumbersome to use. On the other hand, Pascal, C, and Modula II have nice block structure. But I don't like the wait for compiling and linking.

So when I heard about the availability of GFA Basic from Michtron imported from Germany), I ordered it as soon as I could. Five days later it arrived, and I began converting some of my ST software over to it, and tried writing some of my own programs. Performance was astounding. I had been reading lots of rave reviews of Action! for the 8-bit line, and this implementation of Basic looked as good, but for the ST.

The program is only about 57K, leaving plenty of room for code (compare that to the size of ST Basic). The language needs NO line numbers, and is extremely rich in commands. Commands such as INC to increment a variable are really convenient with long variable names.

Well, to continue with tests: I maintain a large mailing list for a youth organization. It has about 2800 records of 109 characters per record. I use a commercial database program to sort it. The sort takes 8 HOURS to sort HALF of it. I project it would take 16 hours to sort it all! I start in the evening, turn off the crt, and store the results the next morning. After talking to the author of the program, I found out he uses a bubble sort algorithm, one of slowest techniques going. So I used GFA Basic to write my own, using a Quicksort algorithm. I copied the sort algorithm almost directly out of the book by Wirth ("Programming + Data = Programs"?). He had it in Pascal. All the same Pascal block structures could be entered without change (a really nice benefit). After fixing a few mistakes on my part (using a % suffix to indicate integers), I tried it and it worked the first time on a test run! Then I threw the whole database at it, knowing it should be faster, and settled in for a long wait. Forty seconds later it was finished!! In disbelief I stepped thru the entire database to make sure it really sorted - it did. I am now a true believer in Quicksort and GFA Basic.

I later converted several programs from ST Basic to GFA Basic. The implementations turned out very clean. For example, the Quicksort program really came out nice due to use of commands such as INC and SWAP, which eliminated unnecessary verbosity.

Execution-debug turnaround time is very fast, and I like the way the interpreter automatically indents my block structures - I don't have to worry about doing it myself.

I've been wanting a language that not only did all the above, but also had full access to GEM, VDI, BIOS, etc. GFA Basic has all this, such as easy-to-use alert boxes, menus, etc.

As for bugs, so far I've found only one: the second time I call for a file-select form, the default filename doesn't get filled in. But I can still select a file from the list.

Alas, all is not perfect. Since GFA Basic originated in Germany, with documentation in German, the manual had to be translated. In my opinion,the person doing the translation didn't know the ST nor English very well. And no one seems to have proofread the manual. There are lots of errors in it, from typos, to improper terminology, to just plain errors. This is NOT the language to learn Basic or the ST with. You should have some familiarity with both. But the manual is comprehensive. I get the feeling that the program authors really tried, but the translators didn't. Too bad, since it detracts from an excellent product. But I can much more easily live with these shortcomings than I can with shortcomings in the language itself.

While this is an interpreter, and a fast one at that, a compiler for the language is promised as coming soon. It will generate standalone code. To me that is the best of both worlds - an interpreter for rapid development, and a compiler to achieve really fast execution speed in the final version of a program.

In summary, I very highly recommend GFA Basic. I've been programming professionally for some 20 years now, and I find this language the most fun and possibly the most powerful to use. (The January 1987 issue of Compute! also has a very favorible review of the language)

The software for GFA Basic comes on disk. Load time is only a few seconds, but when I want to jump in and out quickly, I run from a RAM disk.

Here is the sample program I used. The first part, the one that generates and displays the data, is almost a copy of one of the example programs shown in the manual. I removed the bubble sort routine and replaced it with a Quicksort algorithm, taken almost literally from Wirth's book Algorithms + Data structures = Programs. Note that the indentation and capitalization of the first character is automatically done by GFA Basic as you enter the code into its editor.

```
Sortsize=1000
Dim A$(Sortsize)
'
For I=0 To Sortsize
  A$(I)=Str$(Rnd)
Next I
'
Print "The input character strings:"
@Dsp                                        <-- This is a GOSUB
@Quicksort
Print "The output character strings:"
@Dsp
'
Procedure Dsp
  For I=0 to Sortsize
    Print A$(I)
  Next I
Return
'
Procedure Quicksort
  '
  Local M%
  M%=12
  Local I%,J%,L%,R%
  Local X$  !Temporary record storage
  Local S%  !Runs 1 thru M%
  Dim Stackl%(M%)
  Dim Stackr%(M%)
  '
  S%=1
  Stackl%(1)=1
  Stackr%(1)=Sortsize
  '
  Repeat
    L%=Stackl%(S%)
    R%=Stackr%(S%)
    S%=S%-1
    Repeat
      I%=L%
      J%=R%
      X$=A$((L%+R%) Div 2)
      Repeat
        While Left$(A$(I%),8)<Left$(X$,8)   <--My sort criteria
          Inc I%                            <--replaces Pascal
statement
        Wend
        While Left$(X$,8)<Left$(A$(J%),8)   <--My sort criteria
          Dec I%                            <--replaces Pascal
statement
        Wend
        If I%<=J% Then
          Swap A$(I%),A$(J%)                <--replaces 3 Pascal
statements
          Inc I%
          Dec J%
        Endif
      Until I%>J%
```

(continued page 28)

PRO FORTRAN-77
Reviewed by John Faber

The Atari ST is quickly becoming a multi-lingual computer with many versions of Assembler, BASIC, C, FORTH, Pascal, LOGO, LISP, and other languages currently available from several companies. Now FORTRAN can be added to this list.

FORTRAN (for FOR mula TRAN slation) is a well established language that has been around for many years and is the primary language used for program development on large-scale mainframe computers. There are tens of thousands of programs that have been written for just about every application. FORTRAN's strength is in its ability to manipulate information. Given a collection of data, you could re-arrange it into almost any form, from simple lists of numbers and names, to two- and three-dimensional graphs. You could also create a data file and modify the information as you enter it. Many applications are actually sophisticated data-base programs. Most of my programs are utilities that re-arrange data for other programs. (But, I also have several data base programs, and the beginnings of a word processor in the works.)

For many years, FORTRAN was restricted to large machines because of the memory and speed requirements of the language. The ST has the speed and memory to make FORTRAN a viable language for anyone. For some applications the ST can offer more than the big machines of just a few years ago, in terms of speed and usability. (Of course, no matter how much they put into the micros, the BIG machines are going to get bigger and faster.) Back in 1971, you would spend several hours punching up a batch of cards, then hand the cards to an arm in a window (you rarely saw the person attached to the arm), and then wait until the next day to find out how many mistakes you KNOW you didn't make so you can spend several hours punching up a batch of cards...

Since I work with FORTRAN on a mainframe everyday, having it available on the ST is a big plus. If I get an idea, I can check it out at home and then move it to the mainframe (if it works!). Another plus is that Pro Fortran follows the FORTRAN-77 standard - a program that follows the standard can be compiled on ANY machine that supports FORTRAN (as long as it's FORTRAN-77). Many implementations of FORTRAN offer extensions to the language. These options usually make programming easier, but they reduce transportability. Some FORTRAN compilers have so many extensions that it would be a major effort to convert the program to the standard. However, these compilers usually offer you the option of checking for code that is not part of the standard.

THE PACKAGE

Pro Fortran-77 from Prospero Software is a full implementation of the FORTRAN language described in document X3.9-1978 of the American National Standards Institute (ANSI), and known as FORTRAN-77. The compiler is a true compiler, and generates native (68000) machine code for fast and efficient program execution.

The compiler will run on any ST with GEM DOS, 96k bytes of user RAM, and one drive. The files required to compile and link a program need about 200k of space. With a small editor (no editor is included with the package, but 1st-Word works fine), you will have enough room on a single sided disk to compile a program. Programs generated by the compiler can run on any ST, but require the Prospero Resident Library. The PRL contains 16k bytes of machine code that is common to all programs. By maintaining this code as a separate file, the programs can compile faster and the executable code is smaller.

The software is delivered on a non-protected disk consisting of several groups of files: The compiler, the linker, the program librarian, configuration files, a library of GEM routines, VDI COMMONs (more on this later), and several sample programs.

USER MANUAL

The Pro Fortran-77 User Manual is 200 pages long and comes in a nine-inch, three-ring, loose-leaf binder with a hard case. The manual is divided into three major sections: 1) an overview of important system features, 2) a full description of the Pro Fortran-77 language, and 3) the instructions for using the compiler, linker, and librarian. There are several Appendices with information on the language summary, compile and run-time error messages, and information on mixed language programming (using Pro Pascal). The language definition section (part 2) contains the key elements of the language and enough examples to clarify some of the more complex aspects of FORTRAN. The manual is designed to be a reference manual for those who are familiar with the language. But you are familiar with programming in general, and if you know BASIC, then you shouldn't have too many problems learning FORTRAN.

GENERAL FEATURES

You could easily write a book on all of the features of the FORTRAN language itself (and many have!), so in the following sections, I'll stick with the features of the Pro-Fortran package.

The standard size of all data types is 4 bytes. INTEGERs have the range of -2,147,483,647 to 2,147,483,647. REAL variables correspond to the IEEE standard with 7-digit precision in the range E-38 to E+38. DOUBLE PRECISION REALs have 16-digit precision i the range E-308 to E+308. COMPLEX variables use two REALs (8 bytes). LOGICAL values have the value of 1 or 0 (for true or false). CHARACTER items require 1 byte per element and have a maximum string size of 32,767 characters. Additional types allow INTEGER and LOGICAL variables to be 1 or 2 bytes instead of 4.

Hexadecimal constants can be used anywhere integers are allowed and are in the form: $3AF. Arrays can have a maximum of 7 dimensions. An INCLUDE 'filename' statement is provided to allow you to pull in commonly used code from another file.

There are many file options available. Unit numbers (file identifiers) can be in the range of 0 to 255, or one of the special names recognized by GEM DOS as the name of a device (CON:, PRN:, AUX:). Up to 15 files may open in addition to the two pre-connected files for Input and Output. Files may have formatted or unformatted records that are variable or fixed in length, and can be defined as sequential or direct access. Formatted records can have up to 200 characters. Unformatted records can have up to 32,767 bytes, where numeric storage units are 4 bytes, and character storage units are 1 byte.

ADDITIONAL ROUTINES

In addition to the standard FORTRAN routines, Pro-Fortran offers several interesting subroutines.

GETCOM allows you to get a string of characters that are follow the command name. This could be used to pass parameters to a program or set program options.

RANDOM is the usual random number generator.

IADDR returns the absolute address of a variable.

IPEEK returns the value at a specific memory location.

POKE stores a value at an address.

EXECPG allows one program (a 'parent' program) to run another program (such as a MENU program that will run other programs). All activity in the 'parent' program stops until the 'child' has returned control.

EXITPG will exit a 'child' program and returns control to the 'parent' program.

AFFIRM is a logical function that will display a question mark with prompt that you specify and retain a TRUE status for a 'Y' or 'y' response, and a FALSE status for a 'N' or 'n' response.

DATE and TIME functions provide integer values for the year, month, day, hours, minutes, seconds, and hundredths or seconds. (At this time, the seconds counter is tied into the GEM clock which has a resolution of only 2 seconds, and the hundredths counter always returns a zero.)

THE COMPILER

The Pro-Fortran compiler uses two passes to create a relocatable binary file. In pass one, a temporary work file with intermediate code is generated. In pass two, the program reads the temporary file, generates the relocatable file, and then deletes the work file.

There are several way to invoke the compiler. To run it from the GEM desktop you can install it as an application and specify FOR as the Document type. Then all you have to do is double-click on the file you want to compile. You could also select the TOS-takes-parameters option. This mode allows you to make changes to the default options for this particular run. (A program is provided to allow you to change the default values.) If you just select TOS as the application type, you will be prompted for your selection of each option. To run the compiler from a SHELL, all you do is enter the compiler name, the name of the program, and any options you want to set (ie. F77 TESTPRG).

The compile options allow you to save the console output to a LOG file, (this output contains all error messages - there are more than 150 compiler generated messages), check the range on subscripts and assignments, trace Unit names and lines numbers at run time, generate a map of the variables identifying the names and types, generate a source listing, report undeclared variables, declare INTEGER*2 as the default, and create compact object code (smaller but slower code that is useful where space is more important than speed).

Compile times are dependant upon the length of the program. A short program (approximately 30 lines of code) will compile in less than 10 seconds when using a ram-disk. A longer program (over 770 lines) took approximately 2 minutes and 15 seconds to compile. Of course, it isn't necessary to re-compile the whole program every time. Once a routine has been tested, it can be placed in a library, and then LINKed into the rest of the program.

THE LINKER

The Linker takes the output from one or more relocatable modules from the compiler, and merges them with other modules from the run-time library provided and/or other libraries as needed. It is a two-pass process that takes a collection of .BIN (relocatable) files and converts them to a .PRG (executable) file. A command (or batch) file provides commonly used instructions to the linker by identifying the names of the libraries, and programs to be used.

The Linker may be run in a manner that is similar to the Compiler. A command line is used to tell the linker which binary file to link, the name of the linker command file, and whether or not to optionaly turn off the MAP file (a report of linker activities.

LINK times don't seem to vary as much as the compile times. A short program takes about 5 seconds, and the 770 line program required only 15 seconds, again, using a ram-disk.

THE PROGRAMMING ENVIRONMENT

Selecting a programming environment can be a difficult task on a machine with so many options. With 1 meg of memory in my ST, I set up a 640k RAM DISK. Then I set up the ST-SHELL (from COMPUTE's Atari ST DISK & MAGAZINE Vol.1, No.2) and move all of the files needed to edit and compile a program into the ram disk. My ST now has the "feel" of the

mainframe I use at work. In a couple of seconds, I can bring a program into an editor and make a few changes. The compiler and the linker take about 15 seconds (depending on code size) to generate an executable program with a ".PRG" extension.

SUMMARY

Overall, Pro Fortran is an attractive package. The documentation is clear, easy to follow, and properly indexed. The compile and link process is simple and quick, and there are many options to help with program development. And, best of all, the code it generates is fast.

STATISTICS

What's a review without some numbers? The following table shows the relative program size and compile and link times for several programs. The Source, Binary, and Program (PRG) sizes are in bytes. Compile and Link routines were run on both a ram disk and a floppy disk, and the times are given in seconds. Please note that these times are approximate. The source for HELLO and SIEVE follow the table. Program MEDIT is an on-going project and is included to show a "live" application. The SIEVE program is just one of many variations of the now famous benchmark. The time to complete 100 iterations is 44-46 seconds. Most comparisons use 10 iterations, so just divide by 10 to get 4.4 seconds. (There are, however, reports of Pro Fortran executing the sieve in less than 3 seconds!)

Program	Source	Binary	Program	Compile	Link
HELLO	56	360	4012	5.1	5.1
(floppy)				13.8	22.1
SIEVE	908	1076	4854	9.3	5.5
(floppy)				20.8	23.1
MEDIT	24410	16714	20318	133.3	9.9
(floppy)				181.3	43.5

```
*-----------------------------------------------
      PROGRAM HELLO
      PRINT *, 'HELLO'
      END
*-----------------------------------------------
```

```
*-----------------------------------------------
      PROGRAM SIEVE
      IMPLICIT INTEGER*4 (A-Z)
      LOGICAL*1 FLAGS(8192)
      PARAMETER (SIZE=8190)
      CALL TIME(IH,IM,IS,IF)
      WRITE(*,100) 'BEGIN TEST',IH,IM,IS,IF
100   FORMAT(1X,A10,2X,4(I2.2,:,':'))
*     Loop 100 times.
      DO 10 ITER=1, 100
         COUNT=0
*        Initialize the array.
         DO 20 I=0, SIZE
            FLAGS(I)=.TRUE.
20       CONTINUE
         DO 30 I=0, SIZE
            IF (FLAGS(I)) THEN
               PRIME=I+I+3
               K = PRIME + I
40             CONTINUE
               IF (K.LE.SIZE) THEN
                  FLAGS(K) = .FALSE.
                  K = K + PRIME
                  GOTO 40
               ENDIF
               COUNT=COUNT+1
            ENDIF
30       CONTINUE
10    CONTINUE
      CALL TIME(IH,IM,IS,IF)
      WRITE(*,100) 'END TEST  ',IH,IM,IS,IF
      PRINT *, 'NUMBER OF PRIMES: ', COUNT
      END
*-----------------------------------------------
```

(Ed. John is a Programmer and the Director of the Atari 8-Bit Group.)

GFA BASIC (continued page 25)

```
      If I%<R% Then
        Inc S%
        Stackl%(S%)=I%
        Stackr%(S%)=R%
      Endif
      R%=J%
    Until L%>=R%
  Until S%=0
Return
```

Thats it. Now that I recall my thoughts when typing it in, I do wish they had the ability to declare variables as Integer, so there would be no need to keep using a % suffix to indicate integer.

Finally, I have no connection with Michtron nor with the company that makes GFA Basic whatsoever.

(Ed. Don is a Programmer)

A Review of EASY-DRAW Version 2.0 by Loren Miller

SHOPPING AROUND

I owned a 520 ST for about half a year before thinking seriously about a graphics program. When I started looking, there was The Graphic Artist for around $400, Degas for $40 and something called Easy-Draw, V. 1, for around $130.

I was all set to buy Degas when I checked out Easy- Draw. Comparing them compelled me to think about my particular needs as a filmmaker, game and occasional furniture designer.

As a filmmaker creating storyboards, Degas would be fine: lots of drawing tools. But I could also create my little concept sketches with Easy-Draw--in correct aspect ratio. Color wouldn't be an issue; I owned neither a color monitor nor printer.

The choice became academic when it came to designing anything to scale, like furniture, or gameboard layouts. The choice narrowed to The Graphic Artist, which I could not afford, and Easy-Draw. I never did try the Graphic Artist; I went for Easy-Draw the moment I played with it.

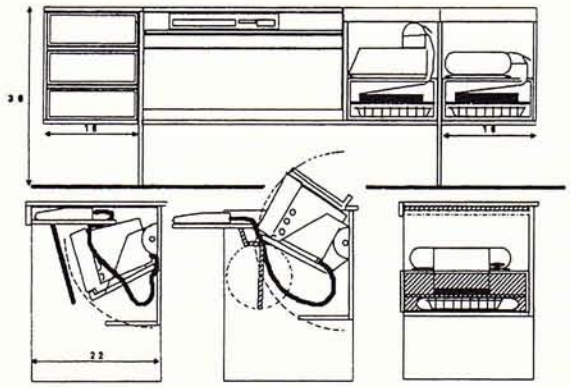
Frankly, that's how I purchased my ST: practically an impulse buy (after months of hovering over M-- demos.) The minute I loaded Easy-Draw at home, the machine became a very serious tool.

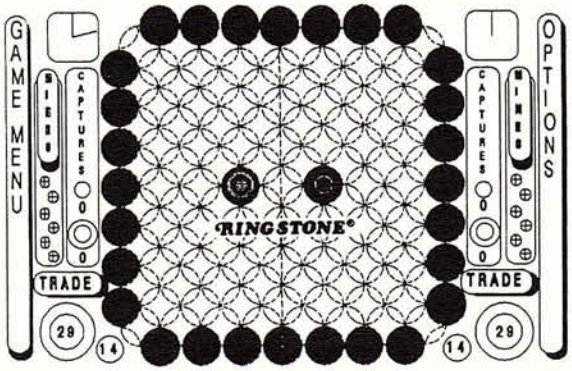
DRAWING FOR THE REAL WORLD

For many of us, the requisite of scale, a means to link computer graphic work with real world space, determines our choice of a drafting, rather than painting program. I bought Easy-Draw V. 1, began work, and now I've fooled about with the V. 2 upgrade, and I'm almost as impressed as I was with V. 1. (I've also tried Degas Elite; as lovely as it is, nothing's changed my initial choice.)

Easy-Draw is quite elegant in structure. With an instantly accessible "toolbox" of primitives and line modes, everything you create and paste down on the screen is assigned its own identity, in the form of a standard "figure box". Draw a line, create a pie wedge, a circle, a text label--each becomes selectable via figure box. The box has little sizing and stretching squares around it, allowing manipulation of the figure within.

A selected figure can be moved about, placed behind another, in front of it, can be made opaque,





filled with a selected pattern, even be made transparent. The program enables you to easily select a figure buried underneath others. If it's hidden from view, make the surface figures transparent, or just click about with the mouse until a figure box pops up--aha! Gotcha! Always works.

Once selected, a figure's outline or fill color can be changed--text color too--and up to four colors of your choice can be displayed.

When you have a group of figures arranged as part of a larger concept, you can electronically join them all together as one figure. If you want to rework a constituent figure, there's an "Explode" command which fragments the join into separate figure boxes. You then select the figure requiring your attention.

Easy-Draw excels in work where little freehand drawing is required. I include two examples here; a cross-section of my "SuperDesk" (Scale: 1 inch= 1 foot; I might just get time to build it by the time you read this) designed naturally for my machine and every last peripheral cluttering my workspace--and a gamescreen (Ringstone(R) is trademarked and copyrighted--watch for it!) converted to precise Atari screen dimensions.

The gamescreen layout particularly would have driven me insane --the board version nearly did once-- if I'd had to do the modification with circle template, pen, ink and dry-transfer lettering. The body of the board was created using little more than the Copy and Arrange Group commands. Notice the shadows under the menu option bars-- result of the Shadow command.

Just sex on a stick, I tell you! But there's more; and that's where Version 2.0 comes in.

THE UPGRADE

Migraph, Easy-Draw's parent, has astutely expanded the program's horizon to include some desktop publishing capabilities. Boiled down, this means you can write an ASCII text file, import it to an Easy-Draw text box laid out under your newsletter masthead, perform some touch-up formatting and add silly picture fillers and by golly, you're ready to print, copy and mail Shoe Lovers Gazette to the world.

It's not necessary to import text; you can create a text column box and compose in situ, which I prefer, as I have discovered if you import a very large text file the file will be truncated, displaying whatever will fit, but you can't get a printout of what you see, possibly because it's still attached to the unseen remainder of the file, (which may be hanging in limbo and hanging up the printout.) There is an F10 Break Block command which allows you to start a new column to place spillover text, but if the file's larger than a page's worth, some estimation and pre-editing seems indicated.

Version 2.0 adds a 7-point font size, appropriate to DP column text, and 28 point for subheads and such. At this writing (2/16/87) we're still stuck with Migraph's "Swiss" (aka Helvetica) font, but that's quite adequate, and more font packs will become available from the company, says the excellent, updated manual.

The old drawback is the need to create a new text box for different styles: bold, italic, or size changes within a text paragraph must be contained within their own figure boxes. Thus, alignment of different styles within a paragraph is required, but it's not hard to do.

It's a bare-bones DP system, but adequate for many simple newletter publishers or occasional flyer producers.

For those who've used Version 1.0 and found difficulty making the text behave, (my text lines were running into eachother during printout unless I per- formed a double-Return after each line during screen composition) you'll be pleased to know this bug has been overcome, possibly because the other big flaw--having to save a drawing in Migraph's "EZD" format for screen work, and a GEM format for printout--has also been eliminated. You now save a drawing in one format, with a GEM file extender, and text behaves in a more WYSIWYG manner.

Grid Spacing now sports imperial (inches) and metric grid settings-- I can create an absolutely accurate 35mm frame. I live for things like this.

Other useful new features include a Flip command and a Mirror command, as well as 5-degree step angle control of wedges and arcs--handy for accurate pie chart graphs. An Edit Polyline feature has been added: you can navigate within a polyline or sketch object to change or delete.

There's an "EZD2GEM.PRG" conversion program enabling you to transform an old V. 1 EZD file to the new GEM format--it'll require some touch-up after transformation.

For keyboard lovers, many of the most common options can now be accessed with Function or Alternate keys.

The current upgrade supports Epson FX-80 and compatibles, (such as my Panasonic KX-P1080i) Star

SG10, Atari SMM804 printers, with a conversion program for Gemini 10X owners. A new driver is included for Epson FX80 15" wide carriage printers, so that horizontally- oriented work can print out without rotating it and doing funny things to the text and fill patterns. The Wish List

While Easy-Draw makes orthographic projections a snap, I wonder how hard it would be to auto-convert a set of top-front-side drawings into 3D perspective display, such as three-quarter front, rear, etc. That would be a spectacular addition. Even an isometric display lacking vanishing points would be very useful.

I still have a problem with line thickness choices: there's a nasty jump from a normal line to the next thickest; there should be an intermediate line thickness.

A bit more explanation about ASCII text import would be appreciated: file size- page space limitations, etc.

I remain interested to know what's to be done about the intriguing greyed-out options "Plotter" and "Camera" within the Output dialog box-- if I were to codify another rule for software design, (and what do I know anyway? I'm no programmer!) it would be "Explain every- thing that isn't yet available in adequate detail."

And it's so obvious it has to be mentioned; will somebody please allow me to unplug the mouse and utilize a graphics pen with two buttons (left-right) on it...pos- sibly a graphics-pen-and-tablet combo... to draw freehand sketches with the sort of hand control a program like this deserves? (Such a hardware accessory would go a long way toward making any graphics program more enjoyable.) The tablet space should accomodate the largest screen- page available-- 11X17, and could also double as a mousepad. A mouse-stylus alone would be a tricky piece of hardware, I suspect. Any prototypes in the neighborhood?

SUMMARY

We have a drafting program with strengthened links to real world needs, offering greater control over screen figures and printout, with some basic desktop publishing features included, available to the complete range of ST owners, from basic 520 system with one disk drive and monochrome, to 1040 owners using a hard disk and color.

And the price for the two-disk package has been trimmed to $79.95. Thanks to Kevin Mitchell and the Migraph staff for a significant upgrade to a fine product.

ATTN: PASCAL USERS

FOR ATARI 520ST

MODULA-2

the successor to Pascal

- FULL interface to GEM DOS, AES and VDI
- Smart linker for greatly reduced code size
- Full Screen Editor linked to compiler locates and identifies all errors.
- True native code implementation (Not UCSD p-Code or M-code)
- Sophisticated multi-pass compiler allows forward references and code optimization
- Desktop automates Edit/Compile/Link cycle
- FileSystem, RealInOut, LongInOut, InOut, Strings, Storage, Terminal
- Streams, MathLib0 and all standard modules
- Directory search paths
- Supports real numbers and transcendental functions ie. sin, cos, tan, arctan, exp, ln, log, power, sqrt
- 3d graphics and multi-tasking demos
- CODE statement for assembly code
- 370-page manual
- Installs on Hard disk and RAM disk
- No royalties or copy protection
- Phone and network customer support provided

Pascal and Modula-2 source code are nearly identical. Modula-2 should be thought of as an enhanced superset of Pascal. Professor Niklaus Wirth (the creator of Pascal) designed Modula-2 to replace Pascal.

Added features of Modula-2 not found in Pascal

- CASE has an ELSE and may contain subranges
- Programs may be broken up into Modules for separate compilation
- Machine level interface
  - Bit-wise operators
  - Direct port and Memory access
  - Absolute addressing
  - Interrupt structure
- Dynamic strings that may be any size
- Multi-tasking is supported
- Procedure variables
- Module version control
- Programmer definable scope of objects
- Open array parameters (VAR r: ARRAY OF REALS;)
- Elegant type transfer functions

Ramdisk Benchmarks (secs)	Compile	Link	Execute	Optomized Size
Sieve of Eratosthenes:	6.2	4.3	3.5	2600 bytes
Float	6.4	4.8	8.3	4844 bytes
Calc	5.5	4.2	3.3	2878 bytes
Null program	5.1	3.2	—	2370 bytes

```
MODULE  Sieve;
CONST   Size = 8190;
TYPE    FlagRange = [0..Size];
        FlagSet = SET OF FlagRange;
VAR     Flags: FlagSet;
        i:     FlagRange;
        Prime, k, Count, Iter: CARDINAL;
BEGIN   (*$S-,$R-,$A+ *)
  FOR Iter:= 1 TO 10 DO
    Count:= 0;
    Flags:= FlagSet(); (* empty set *)
    FOR i:= 0 TO Size DO
      IF (i IN Flags) THEN
        Prime:= (i * 2) + 3; k:= i + Prime;
        WHILE k <= Size DO
          INCL (Flags, k);
          k:= k + Prime;
        END;
        Count:= Count + 1;
      END;
    END;
  END;
END Sieve.
```

```
MODULE Float;
FROM MathLib0 IMPORT sin, ln, exp,
                     sqrt, arctan;
VAR x,y: REAL; i: CARDINAL;
BEGIN (*$T-,$A-,$S-*)
  x:= 1.0;
  FOR i:= 1 TO 1000 DO
    y:= sin (x); y:= ln (x); y:= exp (x);
    y:= sqrt (x); y:= arctan (x);
    x:= x + 0.01;
  END;
END float.
```

```
MODULE calc;
VAR a,b,c: REAL; n, i: CARDINAL;
BEGIN (*$T-,$A-,$S-*)
  n:= 5000;
  a:= 2.71828; b:= 3.14159; c:= 1.0;
  FOR i:= 1 TO n DO
    c:= c*a; c:= c*b; c:= c/a; c:= c/b;
  END;
END calc.
```

Product History

The TDI Modula-2 compiler has been running on the Pinnacle supermicro (Aug. '84), Amiga (Jan. '86) and will soon appear on the Macintosh and UNIX in the 4th Qtr. '86.

Regular Version $79.95 Developer's Version $149.95 Commercial Version $299.95

The regular version contains all the features listed above. The developer's version supplies an extra diskette containing a symbol file decoder – link and load file disassemblers – a source file cross referencer – symbolic debugger – high level Windows library Module – Ramdisk and Print Spooler source files – Resource Compiler. The commercial version contains all of the Atari module source files.

Other Modula-2 Products

Kermit	– Contains full source plus $15 connect time to Compuserve.	$29.95
Examples	– Many Modula-2 example programs to show advanced programming techniques	$24.95
GRID	– Sophisticated multi-key file access method with over 30 procedures to access variable length records.	$49.95

TDI SOFTWARE, INC.

10410 Markison Road ■ Dallas, Texas 75238 ■ (214) 340-4942

Telex: 888442 Compuserve Number: 75026,1331

First Impressions of SoftLogik's PUBLISHING PARTNER
by Walter Mau

Finally a powerful ST program for newsletter preparation is here! Publishing Partner by Soft Logik Corp., referred to just as Partner below, does wonders to end having glue-on-fingers and crooked columns in newsletters. The program, version 1.00, was immediately used to produce a four page newsletter with some graphics including a road map, but mostly text in 9 pt font size, 3 column/page format. A mono-chrome 1040ST was used. Both Helvetica and Times fonts were on the disk and font size varies from 2 to more than 72 points (most newsletters/books use 8 to 12 pt font size). Predecessors to Partner had fonts of smaller, but adequate size range. However, Partner fonts are not "chunky". On a mono-chrome monitor you would have to strain to see the individual pixels of the characters and on a laser writer it is even better. The characters are printed with proportional spacing where the width allotted to characters varies, unlike typewriter and common matrix printer fixed width characters. More on the LaserWriter output later. Soft Logik provides separate disks for color systems and monochrome systems and they should work on a 520ST system.

Views: The program allows you to see the pages of a newsletter in a number of views. The full-page view shows the general layout of a page. However even the high resolution mode of the ST is not sufficient to give readable text for the smaller font sizes. Therefore, small font size text is displayed with swiggles to represent words of text when the font size is too small to read. The swiggles do show where words of text are and is a good compromise given the ST's limitations.

The two-page view shows two adjacent pages on the monitor, again with swiggles for words of small font size. The second page, on the right of the screen, must be the numerically successive page and it can be viewed, but not edited. Editing the second page requires you to choose a different view or make the page the first page of a two page view. The two-page view should probably be avoided because Partner all too frequently redraws the entire screen and of course the two page view takes the longest to redraw. In one test it took 15 seconds to redraw the two pages.

The full-width view displays one page with the width of the page filling the full width of the monitor with the vertical section of the page truncated to retain the correct proportions. With the 9 pt font size used for this newsletter, the text was barely readable.

The 50% view, actual size view, and 200% view allow increasingly detailed views of a page. A user set magnification is also provided. It allows the displayed text to appear at 12 pt size for maximum screen redraw speed. This view seemed the best for my purposes with the magnification set to 133% (12 pt-display-size / 9 pt-printer-size). However leaving this view and returning too often required me to reset the magnification back to 133%.

Columns: You enter text into columns which you define ahead of time. A column is a rectangular area on a page. Columns can be linked to each other to allow text to automatically "flow" into another column when text is added or deleted. This feature is quite impressive. The columns can be on the same page or on different pages. However, the text to tell the reader which columns are linked together must be manually added. It is possible to see the linkage of columns before the "see page --" text is added. Columns can be created by defining a rectangular area with the mouse or by entering the numerical position and dimensions of the column. Columns can be moved and resized at any time and the text within it will "reflow" to fill the new area. If the text in the column exceeds the space available in the column, a "+" icon is shown at the bottom of the column. Operations on columns do not apply to columns linked to the currently active column. Automatic hyphenation is not included, but it does have "soft" (or discretionary) hyphens. These are manually inserted hyphens which are displayed when the word is broken to justify the line (make left and right margins of the column straight), but which are hidden when the text is reflowed and the hyphen is no longer needed. Although moving columns on a page is easy, by just dragging the column with the mouse, moving a column to another page is more difficult. First the text must be copied/moved into a buffer. Then a column must be created on the new page. Then the text is pasted into the new column.

Learning Aids: The manual is very good. You are given a quick overview in Chapter 1, and then succeeding chapters go over the same material with increasing amounts of detail. An addendum was included warning that the GDOS sections of the manual were not yet valid. GDOS seems to be giving developers many problems. There is no online help to explain things, which isn't that bad since the manual is not overwhelmingly huge and the menus are fairly clear.

Graphics Abilities: Partner includes a simple graphics editor which allows you to draw rectangles, rounded rectangles, circles, elipses, polygons, straight lines, horizontal or vertical lines, and free hand. Line type and width may be set from a wide range of choices. Closed figures are filled with the standard fill patterns of the ST. Like EasyDraw, each item drawn is a separate object which can be moved and stretched. Objects overlap each other but are stored as separate objects. This allows you to separate objects at any time with no interaction. You may select which object is to be on top and may rearrange objects on top of each other after they are drawn. These abilities were used to draw a map in the newsletter. However a deficiency soon became apparent. Unlike EasyDraw, the objects cannot be grouped. Repositioning the map required me to reposition each individual object - a pain!

Drawings in both Neochrome and Degas formats may be

imported, cropped, and magnified/reduced to the desired size. A nice feature, but Partner must inherently use nothing better than the resolution of the imported picture. This should mean chunky lines and I expect magnification/reduction of fill patterns to have major problems. This did seem to be the case on the screen, however I did not get to see how such a image would appear on the LaserWriter. Editing details of the images lacks the power of Degas's fat bits. Since Partner's fonts are immeasurably better than Degas fonts, it is better to add text and labels after the graphical image is imported. Also although the imported image can be magnified and reduced, magnified images are not shown on the monitor. Only the space to be used by the magnified image is shown. The printed image would fill the entire space as desired. This is one of the few areas where What-You-See-Is-What-You-Get is not true. EasyDraw graphical items are objects, as in Partner, not bit-mapped images. If they could be imported they would not have the chunkiness of Degas and Neochrome images. Unfortunately, EasyDraw drawings cannot be imported.

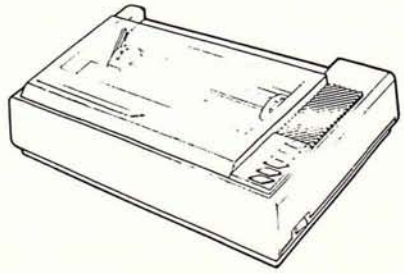
Matrix Printer Output: If a hardcopy output is wanted and you don't have a laserwriter on hand, Partner provides output on a number of matrix printers. On a Panasonic 1091, the output was very close to what was shown on the monitor. The one notable error was that the nine point type had a uneven right margin. The biggest problem was speed. Printing took about 20 minutes per page! A draft mode is provided which should be faster, but with lower print quality.

LaserWriter Output: Unsuccessful attempts were made to send a test page to dealers who offer LaserWriter output for less than a dollar a page. Some dealers are print shops branching into the desktop publishing business and are only vaguely aquainted with modem communication. Customers usually bring files in on a Mac or IBM disk. (Would the IBM 3 and 1/2" disks have the same format as ST disks?) Since ST disks are not compatible with Mac disks, the only way to get the file to a Mac was modem transmission. Finally, through the patience of the people at Page Works, the Postscript file was going over the line. For some reason xmodem did not work, so ASCII transmission was being used. While I pondered the chance of correctly sending the 400k bytes of the 4 page newsletter, with a fifth test page, over the telephone line without xmodem's error checking and error correction, transmission went on for more than half an hour. Then the connection was lost. The folks at Page Works printed the postscript file they had received so far and I planned to generate a new postscript file with the remainder of the newsletter. It turned out that after 1/2 hour I had sent only a small fraction more than one page! At 1200 baud! This was taking too long and so they suggested that I bring my computer in for a direct connection to the LaserWriter at 9600 baud. The next night after the usual cable/operator problems, the 400k byte file was finally being received by a LaserWriter. It took something over 45 minutes, even at 9600 baud, to print the 4 page newsletter. It did burp on the 5th page, the test page that had yet to be printed. Did not know why it burped, but the first 4 pages looked absolutely great! Unlike the matrix printer results, the right margins of the columns were straight. There was no sign of the awful chunkiness even in the large font sizes. The folks at Page Works also explained why the postscript file was so huge. 400k bytes for 5 printed pages. Partner gives x and y position commands for every character printed! This allowed justification by varying the intercharacter spacing. Choosing justification by varying only interword spacing should make the Postscript file much smaller, and more reasonable for modem transmission. Another technique would be to use the public domain ARC program to compress the data before transmission over a modem link.

Tabular Formats: The newsletter included a membership application form which used tabs to vertically align text. Setting these tabs ruined other tabs on all pages. It seems that tabs apply to the entire document not just a column or a page. The problem could be avoided by setting these tabs before entering any text anywhere in the document, or by making a separate document of pages having tabular data.

Conclusions: Partner includes many other features such as kerning, macros, user programmable function keys, superscripts and subscripts, both left and right master pages, and more goodies which were not used. The few problems encountered were the limited number of fonts, the inability to group graphic objects, the huge size of Postscript files, and the document-wide tab settings. Even these problems might be resolved with additional experience with the program. For those of us who abhor "chunky" characters and lines, these problems will appear insignificant with the first LaserWriter printed page. Atari's just announced laserwriter priced at $1500 should make it even easier to get that almost photo-typeset quality. Publishing Partner is highly recommended and lists for $150. I am anxious to use it again on the next issue of that newsletter.

(Ed. Note - Walter was once a programmer at CompuGraphics, a major manufacturer of photo-typesetting equipment, and is currently designing graphics software for a new weather radar system.)



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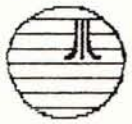

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COMMENTARY

(FROM COMPUSERVE'S EXECUTIVE NEWS SERVICE.)

6/15/1987

FCC COOKS-UP A HALF-BAKED RULE ON ACCESS CHARGES

By Michael Schrage
Special to The Washington Post

Blending a smidgeon of foolishness with a dash of hypocrisy, the folks at the Federal Communications Commission have cooked up a way to dramatically increase your cost of using a personal computer.

Be warned: What these regulatory short-order cooks have on the table is a half-baked idea that may be the law of the land beginning next year.

Essentially, the FCC is proposing that companies that offer on-line data transmission services through local telephone loops - for example, CompuServe, The Source, QuantumLink, Telenet and Tymnet - should have to pay a special "access fee" to hook up to the phone network. These access charges could easily run as high as $5 an hour per user.

In other words, if you are a CompuServe or Dow Jones subscriber, you may end up paying an extra $5 an hour - or more - to access the service. That could boost your phone bill by hundreds of dollars over a year if you are an avid electronic mailer or information retriever.

Now there is a certain logic to what the FCC proposes. The commission makes voice communications companies such as MCI and Sprint pay an access fee to hook up to the local phone lines. The data communications companies had thus far been exempt from such a charge. "The FCC believes that everybody who uses a local exchange for interstate service should help pay for it with an access charge," asserts Ruth Milkman, the FCC attorney handling the notification of the rule changes. "Everybody who uses the network should have to pay."

Indeed, FCC Chairman Dennis Patrick is quoted in The Wall Street Journal as saying that the access charge exemption was nothing less than a subsidy, asserting, "We don't want the network to evolve in response to various Subsidies and anomolies."

That sounds like a noble thought. Alas, it does not ring true. Even in the wake of the Bell System breakup, the phone system is rife with subsidies and "anomolies" of pricing, as Patrick well knows. For the FCC to single out the data communications companies for this access fee is a classic case of having the expedience of one's conviction rather than the courage of one's conviction.

Where's the proof? Here it is: While the FCC is going after public access data networks - that is, data networks that you and I can link to - this ruling exempts the largest private data networks. These are networks run by companies like Ford Motor Co. and Boeing Aerospace.

Though these networks are ostensibly private, they are often linked to local telephone loops through the company's PBX machine (that is, the switchboard). In other words, even though the big companies make the same demand on the local telephone companies, they remain exempt from the access charge fee.

There is no technical reason for this. Let me give you a nontechnical reason. If the FCC proposed a rule that would double the data communications costs of the Fortune 500 companies with private networks, it would face so much political heat that it'd break its legs backpeddling.

But wait, there's more. Technically speaking, data transmission takes up far less bandwidth (space) on a telephone line than voice does. One can multiplex a dozen data transmissions on a line that can only carry one voice conversation. So why should the FCCcharge the data communications companies on a per-user or per-time basis? Why not charge on a per-line basis or a per-bit basis as telecommunications entrepreneur Bill von Meister proposes.

Von Meister, who founded The Source and Quantum Link, argues that since data consumes less bandwidth than voice, it is unfair to make data communications companies pay full fare for access.

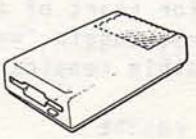
It should be clear that this whole area isn't clear. The FCC has already begun to hedge, saying that the new access charges may be "phased in" rather than implemented in one fell swoop.

But there's no question that this proposal has scared the entire industry and threatens the immediate future of on-line services and the network nation. "Of course we're concerned," says Carl Valenti of Dow Jones, which runs one of the largest on-line service in the United States. "What happens is that we may end up forcing the customers to bear more cost. We don't want that."

Von Meister adds, "This could well price on-line services beyond the reach of a good segment of the public."

What we have here is a basic policy question: Should "economic efficiency" be the sole guiding phrase for public concern, or should we also be concerned about new services and the quality of those services?

(Ed. Richard tenEyck, Director of The Boston Computer Society's Telecommunications Users Group has written an excellent report on this issue in their Summer 1987 newsletter, ONLINE CONNECTION.)



SPECIAL INTEREST GROUPS: SIG REPORTS

PASCAL/MODULA-2 SIG
by
John Williams

This newsletter we dive into FILE types. Most of the useful programs involve at least one file type. This time we examine text files and construct a program that counts the number of words in a specified file.

A word is a series of consecutive characters between 'a'..'z' + 'A'..'Z'. A word should be fairly easy to spot in a text file. It is a series of letters surrounded by non letters. In reading the file, there are two transitions we are concerned with, the transition from letter to non letter and the transition from non letter to letter. Each mark a boundary for a word.

We will increment the word counter on one of these transitions, specifically, the transition from letter to non letter. For this we will use something called a semaphore. A semaphore in simple terms is a flag. It keeps track of and is refered to for context.

A text file is defined in Personal Pascal as a 'PACKED FILE OF CHAR'. This means that there are two characters packed bytewise into every location. This is an important distinction. The file pointer must increment by bytes, as opposed to 16 bit words.

The first step is to declare all the variables. Our semaphore is called 'word', and it is simply a flag that tells us whether the last character was a letter or not. It is true when the file pointer 'infile' points to a location in the middle of a word.

We use 'buf' to store the actual character. It is refreshed whenever we increment the file pointer 'infile' with the get() procedure. It is interesting to note that all operations with file types increment the file pointer to the next appropriate location. After every file manipulation procedure, the pointer points to the next sequential location. This is refered to as streamed I/O. Using the Get() procedure, we are reading the file in a "stream". There are provisions for random access, namely Seek(), but we do not need this for our program.

What we do in the program is to read the specified file in a stream, and to toggle our semaphore 'word' on and off as we pass through letters and space characters. Every time we toggle 'word' off, we increment the word counter. Since the end of file marks a potential termination for a word, we also check 'word' after the program exits the stream reading loop.

One word about using this program, when it prompts for a filename, you must include the device and directory. For example A:\junk.txt.

A great many text manipulation programs work in streams. Streams are memory efficient. One of the nice things about using file types is that the pointer arithmetic is all automatic. When the file pointer gets to the end of a sector, it automatically reads in the next sector from the disk.

The write operations are very similar to read operations. They use the Rewrite() and the Put() procedures. Given these two types of file operation, you should be able to perform all sorts of text processing applications. The word count is only a simple example.

Happy Programming,
John Williams

(Ed. John is a Software Engineer.)

A PSUEDOCODE FOR THE PROGRAM WOULD BE:

```
declare variables
initialize variables
request filename
open file
read file in stream
  if 'word' check for termination
    if terminating, increment counter and toggle 'word' off
  else check for start of a new word
    if new word, toggle 'word' on
check for possible remaining word
close file
write counter result
```

THE ACTUAL PROGRAM IS:

```
PROGRAM count;            (* counts the number of words in a specified file *)

VAR                                       (* declare variables *)

  word:BOOLEAN;                              (* semaphore *)
  i,ihi,ilo,chi,clo,count:INTEGER;         (* counter and misc. *)
  spec:STRING;                              (* filename string *)
  buf:CHAR;                  (* character buffer refreshed every Get() *)
  infile:PACKED FILE OF CHAR;                (* file type *)

BEGIN
  word := FALSE;               (* initialize variables before loop *)
  count := 0;
  ihi := Ord('z');
  ilo := Ord('a');
  chi := Ord('Z');
  clo := Ord('A');
  Writeln('Enter filespec':16);
  Readln(spec);
  Reset(infile,spec);             (* open the specified file *)
  Get(infile);                   (* increment the file pointer *)
  buf := infile^;                     (* refresh the buffer *)
  WHILE NOT Eof(infile) DO             (* stream loop *)
  BEGIN
    i := Ord(buf);             (* convert the character to an integer *)
    IF word                              (* context switch *)
    THEN
    BEGIN
      IF ((i<ilo) OR (i>ihi)) AND ((i<clo) OR (i>chi))
      THEN
      BEGIN                              (* word has terminated *)
        count := count + 1;
        word := FALSE;
      END;
    END
    ELSE
    BEGIN
      IF ((i>ilo) AND (i<ihi)) OR ((i>clo) AND (i<chi))
      THEN
      BEGIN                              (* new word has begun *)
        word := TRUE;
      END;
    END;
    Get(infile);                 (* point to the next character *)
    buf := infile^;                   (* refresh the buffer *)
  END;
  IF word
  THEN
  BEGIN                        (* last word terminated by end of file *)
    count := count + 1;
  END;
  Close(infile);                         (* close file *)
  Writeln(count:6);                     (* write results *)
  Readln(spec);                (* wait for a return before exit *)
END.
```

THE BASICS OF BASIC
by
Eric Bryan

If you are not into C or Assembly Language, don't feel like forking over the dough for a developers kit, don't like LOGO, can't afford (or don't want to learn) Pascal, Modula_2, or Forth, you are left with BASIC. This makes BASIC sound like the bane of all languages. In this case it probably is. The BASIC shipped with your computer has as many bugs as a 4th of July picnic. So if you are interested in BASIC, do us all a favor and either upload a list of any known bugs to me, Eric Bryan, via the bulletin board or via COMPUSERVE (bless their greedy little hearts) at 73557,1332. Atari will be coming out with a new BASIC (so they say) but I won't hold my breath.

In response to this problem, I will be reviewing all the available BASICs I can get my hands on. These will be both compilers and interpreters (for those of you new to these terms-- a compiled language is one in which your code or program must be fed into another program called a compiler which produces a file which will (hopefully!) run. Interpreters are programs like the BASIC you get with the machine which have the program ready to run as soon as you type it in. Compilers make programs harder to develop but produce much faster programs than interpreters.) This column will be intended for the little guy in terms of money, the big guy in terms of curiosity, and the average guy in terms of time. So these BASICs will be rated in terms of cost, functionality/features, and speed. If you hear of a BASIC that sounds interesting let me know and I'll try to review it. I am planning to cover as many BASICs as possible within the next 2 months and will devote one column to reviews. (Feel free to review them yourself; Alan Glick loves reviews and a second opinion is always welcome.)

I should probably give you a little something for having read this far and not falling asleep or moving on to the next subject. I have received several questions concerning screen displays and keyboard inputs. These can be broadly based under the term "user interface." The user interface is a very important part of what a program does. To do a really bang-up job on a program you must make the display uncluttered and command/data inputs as natural as possible. Nothing (other than a buggy program) is worse than having a program which forces you to search the screen to find the information you need. Let's start with the subject of handling the screen and cover the handling of input from the keyboard next month.

One very important command is CLEARW meaning CLEAR Window. This command clears the screen and homes the cursor (places the cursor in the upper left hand corner of the screen). Judicious use of this command will result in less garbage on the screen and less eye strain for the user of your program. I'm not saying that you should use this command every time you need to put something new on the screen--using the other commands will allow you to clear various sections of the screen and therefore may often be faster if you have to keep a signifigant portion of the screen intact.

FULLW makes the designated window fill the entire screen. You should clear a window immediately after FULLW'ing it. This is to avoid a bug which leaves the

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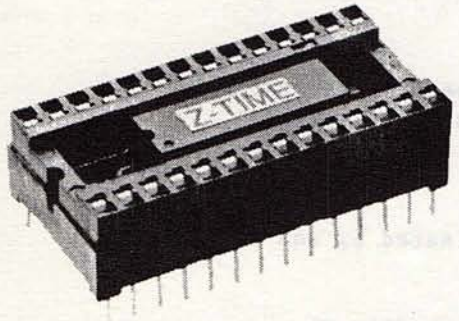

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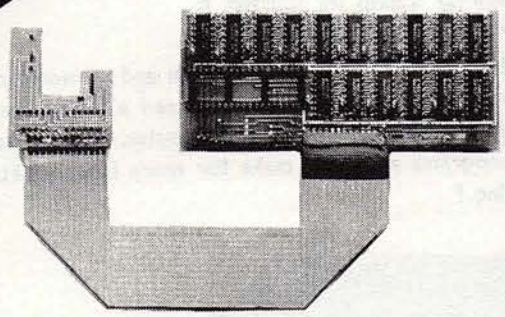

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coordinate system for GOTOXY centered according to the old window size and location.

GOTOXY X,Y will place the cursor according to a coordinate system with 0,0 in the upper left hand corner. You can use this command to hop around to various locations on the screen without disturbing the text. By printing blanks, you can also erase various sections of the screen. This command does have a bug which prohibits its use from the bottom line (possibly the bottom 2 lines of the screen when in the full screen mode.)

PRINT which may be abbreviated as ? has several forms that may be used. PRINT X,Y will print the value of X and then goes to the 14th column and prints Y and then prints a carrige return (goes to column 1 of the next line). Using a semicolon (;) instead of a comma would result in the printing of X and Y with no spaces in between. A comma at the end of either statement will result in the moving of the cursor to the column which is the next multiple of 14 and obviates the carrige return. A semicolon at the end would leave the cursor after the last printed character.

PRINT USING should be read from the manual to understand all the possible implications. It will allow you to know exactly the output of a given print statement if used properly. This can be used to great advantage in keeping your screen clear of garbage.

CLOSEW may be used at the end of the session to remove the FULLW.

These simple commands by no means comprise a complete list but they are the workhorses of a screen oriented input/output program. An example of their use can be seen in last month's JBUG as a full screen hex editor. The typical flow of any such program is to FULLW the output window, CLEARW it, and then place data at known locations using GOTOXY and PRINT or PRINT USING. Should these data change the individual values can be replaced by using GOTOXY and PRINTing over them. In the case of massive modifications to the screen and CLEARW is issued and the entire screen rewritten.

Notice that I have not covered VDI, AES, mouse functions, or graphics. These commands listed are common to almost all BASICs though they may have different names (CLEARW is usually CLS for example.) The specialized commands may be more powerful but they are also much more difficult to learn and are totally undocumented in the manaul supplied with the system. I hope to cover the non-VDI graphics functions and a few PEEK and POKE functions before progressing to VDI and AES. But that can wait until after I cover keyboard input next month and do some reviews of available BASICs.

QUESTIONS AND ANSWERS

Fill this space!! Send your questions to me via the bulletin board or Compuserve and let others benefit from your ignorance. No prizes, no insults, no dunce caps, just answers.

(Ed. Eric is President of NO SOLDER REQUIRED.)

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SOME INTERESTING LOGO DIAGRAMS

by
Jerry Feldman
and Erric Solomon

After having my ST for nearly a year, I decided to take a look at LOGO. Since I know nothing about LOGO, I asked Erric Solomon for some assistance. Erric has been using LOGO for many years, and was formerly employed by Logo Computer Systems, Inc.

Erric suggested that he convert Gongram and Polycirc from the book LOGOWorks, edited by Cynthia Solomon, Margaret Minsky, and Brian Harvey. These two programs are contained in the file polygram.log. These programs were chosen in that they are aesthetically pleasing, and computationally interesting.

GONGRAM is a series of polygons, each succesive polygon is contained within a larger polygon. GONGRAM take 8 inputs:

:inc	The distance between the edge of a layer and the base of the layer on top of it. This also affects the pen thickness.
:RAD	Radius of the larger layer.
:ANGLE1	An angle that dictates the shape of one of the polygons.
:ANGLE2	The angle of the second of the inscribed polygon.
:PC(4)	Pen colors. These range from 0 to 15 for low res, 0 to 3 for medium res.

Try some of the following numbers:

```
gongram 15 90 60 120 6 10 14 4
gongram 10 90 135 45 7 9 12 14
gongram 5 90 40 -1000 4 7 9 12
```

Polycirc draws a series of polygons around a circle. It takes 5 inputs, :SIZE, :ANGLE, :INC, :RAD, :TIMES.

Try experimenting. Some numbers are:

```
POLYCIRC 35 90 10 80 1
POLYCIRC 60 180 10 60 1
POLYCIRC 30 120 5 90 2
```

The program, cycle allows some form of animation. Try the following:

```
gongram 8 100 72 144 9 0 0 9
cycle 200 5
```

(Ed. Both Jerry and Erric are software engineers.)

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```
TO POLYCIRC :SIZE :ANGLE :INC :RAD :TIMES
RT :INC
PU SETPOS LIST (:RAD * COS :TIMES * HEADING) (:RAD * SIN :TIMES *
HEADING)
PD
NEXTPEN2
PLY :SIZE :ANGLE
IF HEADING = 0 [STOP]
POLYCIRC :SIZE :ANGLE :INC :RAD :TIMES
END

TO PLY :SIZE :ANGLE
PLY1 :SIZE :ANGLE HEADING
END

TO PLY1 :SIZE :ANGLE :HEAD
RT :ANGLE
FD :SIZE
IF (HEADING = :HEAD) [STOP]
PLY1 :SIZE :ANGLE :HEAD
END

TO NEXTPEN
IF PC = 15 [SETPC 2] [SETPC PC + 1]
END

TO NEXTPEN2
IF PC = 4 [SETPC 2] [SETPC PC + 1]
END

TO PC
OP ITEM 5 TF
END

TO GONGRAM :INC :RAD :ANGLE1 :ANGLE2 :PC1 :PC2 :PC3 :PC4
SETLINE (LIST 1 :INC :PC1)
IF :RAD < 20 [STOP]
SETPC :PC1
POLYGON :RAD :ANGLE1
SETPC :PC2
POLYGON :RAD :ANGLE2
SETPC :PC3
POLYGON :RAD - :INC :ANGLE1
SETPC :PC4
POLYGON :RAD - :INC :ANGLE2
GONGRAM :INC :RAD - 3 * :INC :ANGLE1 :ANGLE2 :PC1 :PC2 :PC3 :PC4
END

TO POLY_FILL :RAD :ANGLE
PU
SETPOS LIST :RAD * SIN HEADING :RAD * COS HEADING
PD
POLYGON :RAD :ANGLE HEADING
END
```

```
TO POLYGON :RAD :ANGLE
PU
SETPOS LIST :RAD * SIN HEADING :RAD * COS HEADING
PD
POLYGON1 :RAD :ANGLE HEADING
END

TO POLYGON1 :RAD :ANGLE :START
RT :ANGLE
SETPOS LIST :RAD * SIN HEADING :RAD * COS HEADING
IF HEADING = :START [STOP]
POLYGON1 :RAD :ANGLE :START
END

TO CYCLE
MAKE "PAL2 PAL 2
MAKE "PAL3 PAL 3
SETPAL 2 PAL 4
SETPAL 3 :PAL2
SETPAL 4 :PAL3
END

TO CYCLE2
MAKE "PAL PAL 2
SETPAL 2 PAL 3
SETPAL 3 PAL 4
SETPAL 4 PAL 5
SETPAL 5 PAL 6
SETPAL 6 PAL 7
SETPAL 7 PAL 8
SETPAL 8 PAL 9
SETPAL 9 PAL 10
SETPAL 10 PAL 11
SETPAL 11 PAL 12
SETPAL 12 PAL 13
SETPAL 13 PAL 14
SETPAL 14 PAL 15
SETPAL 15 :PAL
END

TO CYCLE3
MAKE "PAL2 PAL 2
MAKE "PAL3 PAL 3
MAKE "PAL4 PAL 4
SETPAL 2 PAL 5
SETPAL 3 :PAL2
SETPAL 4 :PAL3
SETPAL 5 :PAL4
END

MAKE "GFILL "TRUE
MAKE "PAL [0 0 0]
MAKE "PAL4 [0 0 0]
MAKE "PAL3 [0 0 1000]
MAKE "PAL2 [0 571 1000]
```

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ATARI TRADE SHOWS

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Atari at CES -- Winter 1987
A sneak preview of what's new

(Las Vegas -- January 7) -- The motto of Tramiel's Atari Corporation has just been updated. Instead of "Power Without The Price," Atari's battle cry is "Where the Action Is."

The action started with three major hardware announcements from Atari. First is Atari's introduction of the new "Mega" ST series.

Atari has altered their 16-bit product line in both features and styling. The new STs are component systems, similar in appearance to an IBM PC, but less "clunky" -- they bear a sleek micro-stereo component look. A detachable keyboard connects via cable to a separate box housing the CPU, an included double-density 3 1/2 inch drive and a battery-sustained real-time calendar clock. Cosmetically, the Mega STs are the same dove-gray ST color, the separated keyboard resembling a 1040 ST with the diagonal vent area sliced off. The keyboard, by the way, has a much crisper feel to it than current ST keyboards, although key layout and the keytops themselves remain unchanged.

The new STs are designed as "open architecture" machines. Expansion devices such as add-on cards might be plugged into a peripheral box, which would then connect to the ST through the DMA port or bus expansion connector. In the future, such a box could feature dedicated chips, such as the new Motorola 68020 and the 68881 math coprocessor, giving blinding speed to graphics processing, real-time animation and other memory intensive, number-crunching functions. The Mega STs will be available in 1, 2 and 4 megabyte configurations, with prices reportedly starting at around $995. And yes, the Mega STs come with the blitter chip built in.

The second major announcement was the Atari ST Desktop Publishing System. An Atari ST "host" computer will serve as the front end for a laser printer "engine." As of this writing (Wednesday night, before CES officially opens) the manufacturer of Atari's laser printer has not been identified. (Perhaps Atari will name names at their press conference at 9:00 Thursday morning.) However, John Skruch at Atari told Antic Publishing the manufacturer was "one of the three biggest names in the laser printer business." The Atari laser printer promises virtually typeset quality electophotographic print technology with a 300 dot-per-inch resolution.

Third, and probably most unusual of Atari's new hardware announcements, was the Atari IBM PC compatible. That's right -- Atari has jumped into Compaq, Leading Edge and Hyundai territory by announcing their own IBM PC "clone" -- to retail for an amazing $495. The new Atari PC features an 8088 microprocessor with a switchable clock speed of 4.77 MHz or 8MHz. The PC will come with 512K standard, expandable to 640K of RAM, plus 256K of screen RAM. As Atari's press information states, the PC "supports these graphics modes: enhanced color adaptor (EGA), color graphics adaptor, monochrome display adaptor and Hercules graphics cards." The resolution is 640 X 350, either monochrome or color. The PC is equipped with standard ports: parallel printer ports, RS232C serial port, plus built-in mouse support. Not surprisingly, it comes with a detachable keyboard (IBM PC/XT layout), and will accept a 8087 numeric coprocessor. The CPU box has a 360K 5 1/4-inch disk drive built in, and can accept two additional external drives. The PC's styling is similar to Atari's new STs -- either one would look sexy sitting on an executive (or home) desk. Atari hopes to use its PC as a front-end vehicle for their laser printer, and claims the PC will run "thousands of pieces of IBM software." And what was that graphics operating system software package we saw next to the Atari PC Clone? We'll get to that juicy gossip in our next report!

Those are the major Atari stories breaking before CES has actually started. Stay tuned to ANTIC ONLINE for more in-depth reports on Atari at CES. Later reports will focus on what's new in both 16- and 8-bit software and third-party peripherals for your favorite computers.

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A Phoenix From The Ashes
Atari and The Winter 1987 CES
By Jon Bell and Matt Loveless
Editor, Consulting Editor,
START Magazine

(Las Vegas -- January 8) -- "Now, in 1987, we are declaring war on the computer business in the United States." These were the words of Sam Press Tramiel, as Atari kicked off the first day of CES with a 9:00 a.m. press conference at the Dunes Hotel.

"We are the number one computer in West Germany, in the home computer business and the personal computer business," he said, before adding that those interested could check with the German press and confirm that fact.

Atari's stance at the press conference wasn't merely confident, it was ruthlessly aggressive. The Tramiels made two points loud and clear: Atari Corporation has conquered overseas markets with its products, most notably the ST, and has established a firm foothold as a major player in the personal computer industry. The second point: Atari has now fulfilled its financial obligations to its patient former parent, Warner Communications, and is now no longer shackled to Warner. Atari's stock offering gave it an infusion of cash which enabled it to pay off its loan from Warner. According to an article in the December 15, 1986 issue of Business Week, Jack Tramiel flew to New York City and presented Warner Communications officials with a check for $36 million, thus effectively closing down Atari's debt.

(Late-breaking financial note: Atari's stock rose 2 1/2 points today, 17 1/2, up from 15. The stock has risen 6 points overall since it was first offered in November.)

Now completely free of the Warner mantle, Jack Tramiel has stopped looking over his shoulder at Atari's troubled past and is instead staring intently into his company's future. At the press conference, he reiterated his "Business is War" philosophy in no uncertain terms:

"The customer who supports my products knows what he wants. If you don't give him the right products at the right prices, he stops buying -- which is exactly what happened in 1985.

"Even giants, companies like IBM, have started to realize this and follow my footsteps, and keep reducing prices. That's the only way they can sell. And I'm not sure that they'll be able to catch up. . .

"IBM. . . gave their business to the Far East on a silver platter because their prices were so high. And they just allowed all those people to compete with them. We at Atari have no intention of following their footsteps. We will try to always have the most innovative products -- constantly coming up with new products at the right prices. . . The philosophy continues, the philosophy is successful."

"THE FUN IS BACK"

Atari formally introduced its new product line, from revamped videogames to its IBM PC compatible, with a short videotape presentation.

Videogames, which sent Atari Inc. into billion-dollar-a-year profitability and then sent it spiraling almost into oblivion, have re-emerged at Tramiel's Atari Corp. The venerable Atari warhorse, the 2600, has been given a facelift and is now selling at a retail price of under $50. The new 7800 game system, which James Morgan introduced in those last terrible months before the Tramiel takeover, is heralded as the next generation of videogame. It includes a copy of Pole Position, and will retail for under $90. The 7800 features better than XE-quality graphics and sound, and will accept the new "Supergame" cartridges from such companies as Broderbund, Epyx and Electronic Arts. The first titles to be released include Karateka, Choplifter, Summer Games, One On One Basketball and Skyfox.

Sam Tramiel then mentioned a third new videogame system from Atari -- the XE System. It was displayed (not running) in a glass case at the Atari booth. The XE System is a small, squarish box which doesn't resemble a standard videogame. Its sharp angles and round, pastel buttons give it an unusual, almost art-deco appearance. According to Tramiel, it is fully expandable with a plug-in keyboard and disk drive, turning it into an introductory computer. It will be available 2nd quarter of 1987.

THE MEGA ST SYSTEMS

"I introduced the first personal computer 10 years ago," said Jack Tramiel. "It was called the PET. It was a 4K machine. . . Today we announced a 4-megabyte machine." From 4K to 4000K in 10 years is an incredible feat of technological evolution, and the new Mega STs represent another link in that evolutionary computer chain.

As we mentioned in our first report, the Mega STs will be sold in 1, 2 and 4 megabyte configurations. They feature detachable keyboards (with improved, crisper keyboard "feel"), a separate CPU box housing a double density 3 1/2 inch drive, built-in blitter chip, expansion bus and power supply, and use the new one-megabyte DRAMs. A mouse port and joystick port are in the back of the ST keyboard unit, near the center. The keyboard itself is attached with a length of coiled cable, using standard phone jacks.

The usual ST ports (DMA, MIDI, etc.) are arranged in the back of the CPU box. The box also serves as a monitor platform. Atari's new 20-megabyte hard disk fits in the same "footprint" as the CPU and can be placed between CPU and monitor, adding only another inch.

UNDER $1500 LASER PRINTER

Conventional laser printers offered by other companies require hundreds of dollars worth of microprocessor and support electronics. But the Atari ST's high-speed DMA port, coupled with the raw horsepower of the 68000 microprocessor, allows the ST to drive their new laser printer directly, thereby lowering the price. At the show, Atari announced a desktop publishing system, which will include a two megabyte Mega ST and an Atari Laser Printer, for less than $3000. The 300 dot-per-inch laser printer will also be sold separately for under $1500. A spring delivery date was announced.

In the Atari booth, a Mega ST2 (2-meg) was actually printing high-resolution, excellent quality press releases (about one per second), giving true meaning to the phrase, "hot off the press." Although Atari was reluctant to identify the manufacturer of the printer engine, experts recognized the show model as a Canon. The Canon engine is known for its low price. However, it supposedly has a limited print life. Also, it is good for small-quantity printing, but the per-copy price is relatively high. Antic Publishing was unable to determine if Canon will be the actual supplier for the final version. When asked at the press conference, Sam Tramiel identified the supplier as "Japan, Inc." (Editor's note: since Canon is not known for extremely low volume prices to OEM vendors (such as Atari Corp.), our assumption is that the final Atari laser printer will not use a Canon engine.)

Within 90 days we may even see a laser printer development kit, allowing software to interface with virtually any laser printer engine. This will open the market for third party manufacturers, both high- and low-end, and make the Atari one of the most versatile (and inexpensive) desktop publishing systems around. For less than the price of a Macintosh, you can get a Mega ST2, an Atari Laser Printer, and the software to drive it.

THE ATARI IBM PC COMPATIBLE

As we mentioned in our first ANTIC NLINE report, Atari has announced the first in a proposed series of IBM-compatible computers.

There will be two configurations of the Atari PC: a $499 version, with a IBM PC/XT-styled keyboard and CPU only; and the $699 version, which will include a "tri-sync EGA monochrome monitor." (The actual PC hardware is identical; only the packages offered are different.) The monitor has a 720 X 348 high-resolution display. Both computers come with mouse ports and mouse, built-in parallel, serial and SCSI ports, one 5 1/4 inch 360K disk drive (built into the CPU box), and 512K RAM expandable to 640K RAM. They also include 256K of dedicated screen RAM, which makes the entire 512K of system RAM available to developers. Atari will also market an expansion box

which will accomodate up to five AT-sized add-on boards.

The Atari PC comes with (unheard-of) graphics support built in: EGA (enhanced graphics adaptor), CGA (color graphics adaptor), Hercules and IBM monochrome. With an EGA monitor, the PC will support 640 X 350 pixels resolution. Most EGA monitors retail for over a thousand dollars, however sources at Atari indicate they are working on an extremely low-priced EGA color monitor. You can also hook up a standard ST 3 1/2 inch disk drive and read and write IBM laptop disks, making the transferral of text files in that format an easy task. (Note: this does NOT mean you can run ST software on the Atari PC.)

The Atari PC will be bundled with the GEM Desktop from Digital Research along with other applications. The "juicy gossip" mentioned in our first report: it is rumored that Microsoft Windows will be available for the PC. (Also, Windows MIGHT be available for the new Mega STs.)

Who makes the Atari PC? Unlike many of the compatibles on the market, Atari manufactures the PC in their 200,000 square-foot Taiwan plant, where they make all their equipment.

Atari officials quickly dismissed concern that their PC indicated any abandonment of their ST line. John Skruch of Atari likened the situation to a software house manufacturing products for differing computers: Atari is an electronics company specializing in computers, and their PC is simply an entrance into another market. (You should also consider that Commodore is showing both their standard Amiga and an IBM PC clone at CES. Commodore has sold their clone in Europe for the last year or so, and are just now attempting to market it in the U.S.)

"The importance of this machine," says Sam Tramiel, "is that someone can take it home, open the box, and be ready to run. You don't have to plug in cards or extra things; you have everything you need, right off the bat."

THE FUTURE ATARI

Looking forward, Jack Tramiel proffered the following to the press: "We almost started believing the press -- about how bad it [Atari's viability] really was. Well, the press is wrong. It seems that the customers want to buy the right product at the right price. 1986... was a fantastic year, and 1987 will be much, much, much better."

TOMORROW: NEW SOFTWARE, THIRD PARTY HARDWARE, AND 8-BIT COVERAGE.

Read about Crystal Castles, Psion Chess, StereoTek 3-D glasses, the ADAP digital sound processor, and a new, hard-hitting, TV commercial pitting the XE against the Commodore 64. Guess who wins?

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Atari at The Winter 1987 CES Software and Wrap-up, Part 1.

NOTE: I'd like to personally apologize to those of you waiting to get an CES update on Saturday, as we promised. What our people at CES and our people back at Antic had was, in the words of Strother Martin from "Cool Hand Luke," a "failure to communicate."

CompuServe's Marty Isaacs and Ron Luks of the Atari SIG enabled us to update on Friday, Saturday and Sunday,although a misunderstanding on my part resulted in our article not appearing on Saturday. Therefore, our Saturday report on new software and hardware is now part of this CES wrap-up, and should conclude tomorrow.

I'd like to thank Ron Luks, and most especially Charles Jackson, Antic Online's Editor, for their valiant efforts in keeping the Atari community informed. For their part, they are blameless.

Jon A. Bell
Editor

THIRD PARTY HARDWARE AT CES
By Matt Loveless
Consulting Editor, START

12/Jan/1987

Hybrid Arts Inc., the software and hardware with a reputation for putting out the best MIDI software in the industry, showed one of the most exciting new products in the Atari world: The ADAP Soundrack. ADAP stands for Analog to Digital Processor. It's a $2000 hardware plus software system, built in conjunction with Milford Laboratories, Inc., for the Atari ST, designed to replace equipment costing over thirty times as much. The basis of the ADAP is a racey black rack mount box with sound input and output lines, plus an interface box which plugs into the cartridge port of a one- (or more) megabyte machine. What does it do? Digital sampling. And it does it well.

Digital sampling is a process where sound is converted into digital patterns which a computer can store, manipulate, and play back at will. Compact discs have been using this technology for years now. Sound enters the ADAP box from virtually any sound source (such as a compact disc player) and is converted into digital signals in the ST's memory. Once the sound is in the ST, it appears as a digital waveform in a window in the center of the screen.

You can examine the waveform by zooming in or out on either the X or Y axis, or even both. You can scroll along the waveform to see its entirety, or even sample more than one sound and switch between them.

Hybrid Arts claims the system can sample at a rate of 44.1 Khz with 16 bits of resolution -- that's compact disc quality! It even samples in stereo. Once a sample is made, it can be played back at the push of a button. The sound is phenomenal. But ADAP doesn't just let you record samples. You can also edit them. You can cut, copy, and paste portions of a sample. You can even do mixing, looping, or modify the actual waveform freehand.

The ADAP system replaces some super-sophisticated musical sampling equipment by allowing you to "play" the samples from your MIDI keyboard,

polyphonically, with up to eight voices going simultaneously.
- On a one-megabyte machine, allows 80 seconds of sampling at full 16-bit linear resolution at 10 Khz. Allows 20 seconds at 44.1 Khz.
- Fully MIDI compatible
- Polyphonic
- Storage of up to 64 multi-samples in memory for instant playback.
- Real-time digital effects processing (delay, echo, reverb, etc.)
- Real-time oscilloscope
- Direct from compact disc, digital to digital sampling.
- Multi-sample keyboard splits.
- Compatible with the new MIDI digital sample dump data standard. Will work with data from other MIDI sampling devices.
- 19" black rack-mount case.
- Suggested retail price is $1,995.

When asked why they chose the Atari ST as the host sytem, Frank Foster, president of Hybrid Arts, replied: "It's not like we actually 'chose' Atari. It simply couldn't be done on any other machine. Not on an Amiga. Not on a Macintosh." Now that's a compliment.

Other music news: Electronic Music Publishing House has MIDIPLAY, a real-time MIDI record/playback system which supports all 16 channels of MIDI information. List price is $49.95, and a demo disk is $5. They also have Musidisks, a series of pre-recorded data disks of everything from Bach to the Beatles. List is $19.95.

We will be covering the exciting world of MIDI, music software and the ST's role in music composition in future issues of START.

STEREO 3-D GLASSES PLUS NEW SOFTWARE TITLES

The Catalog software division of Antic Publishing was showing, center stage at the Atari Booth, the 3-D StereoTek Liquid Crystal Shutter Glasses along with some spectacular demos of upcoming software. The new releases include Wanderer, a point-of-view space game, CAD-3D 2.0, CyberMate, the much anticipated stereo modeling and animation system, a molecular modeling program, and Stereo Maps & Legends. Certainly the most impressive demo was the world-premiere of Tom Hudson's SteelyBoink!, a stereo ray-tracing demo illustrating asimulated depth of 8-10 inches into the ST's monitor. START Magazine will be presenting a version of the SteelyBoink! demo which does not require the StereoTek glasses on Antic Online in February. This will highlight Tom's ray-tracing article in START #4 (available in March).

A SMATTERING OF NEW ST SOFTWARE

The following represents only a few of the many ST programs shown at the Winter CES. New products information and reviews of both these and any omitted programs can be found in upcoming issues of Antic and START.

Firebird, of Ramsey, New Jersey has several new programs for the ST. Universal Military Simulator lets you create your own combat scenarios, or even enter in the parameters of real battles and then modify them "to explore the 'what if' possibilities." Tracker is a shoot-em-up arcade game which combines a huge playfield with artificial intelligence routines. Your deadly enemies, the Cycloids, remember your play tactics and try to prevent you from using them again. Golden Path is a new animated illustrated graphics adventure game. You use the mouse to control your character through 45 screens of graphics and animation. All three games should retail for $44.95.
WordPerfect, the best selling and highest rated full-feature word processor for the IBM PC, is now a reality on the ST. WordPerfect Corporation was demonstrating a prerelease version of the product at the Atari booth.

The Atari version of WordPerfect features the best of both worlds: it is GEM based, using menu bars and windows, but it also supports the full array of keyboard commands familiar to users of the IBM version. Additionally, users moving from the IBM to the Atari version will also benefit from full file compatiblity with WordPerfect 4.1.

The program uses high-speed assembly language routines for ultra-fast response times. I gave it the acid test and found it faster than any other word processor for the ST, faster even than ST Writer, the venerable speed-demon.

WordPerfect supports footnote and endnote compilation, full keystroke macros, automatic calculation of numeric tables with the built-in math mode, complete database merge capabilities, an outline feature, a nine-keyword sorting facility for alphabetizing lists, a 115,000 word dictionary, including legal and medical terms, a five-level table of contents and index generator, a five newspaper-style columnar display, a sophisticated thesaurus, a three-level undo capability, and a virtual memory data system, allowing data to flow onto disk when computer memory is full.

This will clearly be the most sophisticated word processor for the Atari ST, taking full advantage of the new one, two, and four megabyte machines. WordPerfect for the Atari is scheduled for release second quarter, 1987. The suggested retail price is $395, although a representative from WordPerfect indicated Atari users should be able to purchase it in the low $200s.
Timeworks has released their three powerful productivity software for the ST: Word Writer ST, a word processor, Data Manager ST (covered in the Brian Lee's Database Overview in START #4. out in March), and Swiftcalc ST, a spreadsheet. The Timeworks programs are designed as an integrated package. Suggested retail is $79.95.

A QUICK LOOK AT THE 8-BIT FIELD

Although not as numerous or as flashy as the new ST software, there were several companies showing software or distributing information for the 8-bit Atari line. These companies shared a half-dozen XE computers, which sat alongside the new XE [game and computer] System, the new 8-bit 3 1/2 inch drive, and Atari's 1200 baud XE modem (which will also work on the STs). Prices on this hardware have not yet been set.

New from Hi-Tech Expressions is AwardWare, a program allowing you to custom-design and print awards, certificates, ribons, tickets, coupons and checks. The program includes templates for your forms -- just type in your message and you're ready to give someone that special greeting! Retail price is $14.95. Also from Hi-Tech is CardWare, an animated birthday card, for

$9.95; PartyWare, card and party design kit with database of friends and events, for $14.95; HeartWare, an animated greeting disk and love note maker (let a machine do the mushy stuff for you), $9.95; and WareWithAll, which includes colorful stationery, envelopes, stickers, markers, and disk labels, for $14.95.

ICD, Inc. was promoting their large array of 8-bit Atari products, such as P:R Connection, an interface allowing your XL or XE to run a large variety of disparate printers and modems; the Printer Connection, a "smart" cable which will make your 8-bit Atari compatible with any Centronics parallel printers; Multi I/O, a box which gives you a RAMdisk, parallel printer interface, serial printer and modem interface, a printer spooler, and a hard disk interface; an 80-Column Adapter, which plugs inside of the Multi I/O case; US Doubler, a chip set which gives your 1050 drive true double density and an accelerated I/O rate; SpartaDOS Construction Set, ICD's custom DOS; SpartaDOS X, a cartridge-based DOS; R-Time 8; a piggyback cartridge clock; and RAMBO XL, a program enabling your 800XL or 1200XL to make use of 256K of RAM (you supply the DRAM memory chips).

Zobian Controls was promoting RAOS (Rat Actuated Operating System), their operating system giving your XE a GEM-like OS, including pull-down windows, a mouse-controlled arrow-pointer, and icons. Zobian also has improved their mouse, originally called the Rat. The SuperRAT is now a two-button digital mouse, which works in conjunction with the Zobian DESKTOP program Z-DOS (included in RAOS). The SuperRAT/RAOS combination sells for $99.00.

NEXT: WRAP-UP, PART 2.

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Atari at the Winter 1987 CES Wrap-up, Part II -- Errant thoughts.

By Jon A. Bell
Editor, START

13-JAN-87: Those readers who have never been to a Winter Consumer Electronics Show have little conception of the actual work involved in covering the events. The show is sprawled across the enormous Las Vegas Convention Center (several huge buildings the size of, say, dirigible hangers), the surrounding hotels' convention rooms and hotel suites. Readers should be aware that CES CAN be a lot of fun -- the only drawback is time and your personal stamina. For the businesses involved (including Antic), CES is a great deal of handshaking, talking, meeting with advertisers, computer dealers and retailers, giving out business cards, handing out magazines, soliciting articles for those magazines, business lunches, and writing articles for ANTIC ONLINE (to the best of our ability). It's not a pleasure trip. Finding the time, after work commitments, to see the latest compact disk player or car stereo is difficult. After you've been on your feet for 12 hours a day, you don't want to do anything but tear off your too-tight tie, go back to your hotel room and collapse, or else look in the Yellow Pages under "foot transplants."

(Actually, to some extent this weariness is to your advantage. You're too tired to throw away money on gambling, although I found the time to improve Las Vegas's roads and school system to the tune of $10 at the craps tables. I would've been better off putting that money towards a pair of sensible shoes for the show. I wore black leather shoes the first day. I wore Hush Puppies and bandages the next three.)

A great deal of Antic's handshaking and elbow-rubbing (both figuratively and literally) was at the always-crowded Atari "booth." Atari's display at the Consumer Electronics show was a huge assemblage of black plexiglass panels, right at the entrance of the West Hall. Atari's location was terrific -- their display was the first thing you saw when you walked into the building. (We've avoided pointless Commodore-bashing, but for those interested in the competition, Commodore DID attend, and had an impressive two-story booth in the middle of the building. They were showing their PC 10 and 11, IBM clones to retail for slightly under $1000. They also, of course, were promoting the Amiga. I breezed through the booth during set-up day [Wednesday], and didn't return. My conclusions? Commodore now has to compete with Jack's Atari -- and his prices -- on both the ST/Amiga front and now the IBM PC front. The only negative thing I'll say about Commodore is that Atari's booth position was much better.

The black Atari panels were festooned with the specifications of their new products (such as the Atari PC and the Mega STs), the names of ST software developers, and housed many color monitors showing various demos. (Funny note: One of the public domain DEGAS screens flashing by on the monitors depicted a PC with the caption, "How do you spell boring? I - B - M." Guess that one slipped by the new PC-promoting Atari.)

In all, there were about 20 STs, mainly 520s, which were shared by software developers. Many of the developers demonstrated their products in shifts. Atari had 2 of the new Mega STs (both 2 megabyte versions -- Mega ST2s); one sitting next to Antic Software's StereoTek glasses display, the other connected to the Atari laser printer. Half-a-dozen XEs were on display; XLENT software, LCD Inc., and Zobian showed off their new wares. XLENT had Typesetter Elite (soon to be reviewed in The ST Resource), and Miniature Golf, by Dave Plotkin. XLENT's Jennifer Brabson showed me an amusing book of her own cartoons, which you might be seeing in one of our magazines or in computer graphics form in the not-too-distant future. One of her caricatures depicted Tom Hudson, wearing a plaid shirt and slacks (accurate observation: Tom hates suits), sitting at his CES ST keyboard demonstrating DEGAS Elite.

Atari also showed their new 1200 baud Hayes-compatible modem, a sleek beige box approximately 6" wide, 10" long and a little over 1" high, which they introduced at Comdex. Retail is around $99. An odd piece of Atari XE hardware was their cassette program recorder -- the XC 11. Although some people on a VERY tight budget might want to buy it, statistically speaking, the majority of 8-bit owners have disk drives, and cassette-based software might be difficult to find.

One (intentionally) funny aspect of the Atari show was a new 30-second XE commercial, which ran over one of the monitors in the XE section. (Atari also showed the commercial during the videotape presentation at their Thursday morning press conference.) The commercial shows two young boys sitting at two computers -- an Atari XE and a Commodore 64. As they type away, the Commodore boy looks over at the Atari boy, smiles smugly, and -- no kidding -- his head expands. It rises up (an inflatable makeup appliance) right under his beanie. The Atari boy looks over at him, and HIS head expands, slightly larger. Then there is a voice-over saying that the XE has better graphics, sound and games than the 64, while both boys play musical head expansion. Finally, as the voice concludes, "The Atari blows the Commodore out of the water," the Commodore boy's beanie flies off, and his head -- and ego -- deflates. This must be a new trend in the computer industry, for Epyx Software has a commercial where a kid is playing a videogame and becomes so excited his head EXPLODES, then re-integrates itself. Who's the head of these advertising agencies -- David Cronenberg?

We now come to normal kids. Back to back with one wall of the ST display out of view was an open-ended room with Atari's reworked 2600 and 7800 game machines, these also hooked up to monitors, showing Crystal Castles, Pole Position, Centipede, Joust, Battlezone (!) and other Atari classics. A charming touch was the presence of local children, dressed in Atari warm-up suits, who were demonstrating the videogames for the benefit of us repressed, three-piece-suited adults. (Note: General attendance to CES is limited to those 18 and over. The children were there by special permission.) I walked up to a game playing on a 7800 system and idly picked up a joystick. An angelic blond 9-year-old boy, who should've been out playing with June Lockhart and Lassie, picked up the other joystick and politely asked me if I would like to play against him. "Sure," I said, smiling indulgently. Five minutes later, the lad's razor-honed videogame reflexes had blown me away. My smile faded and I stomped off, grumbling.

Some final software news: Psion Chess will be distributed by Atari. No price has been set. Electronic Arts is putting the finishing touches on their Chessmaster 2000, a fantastic ST chess game they are porting over from -- you guessed it -- the Amiga. I had the opportunity to play it during an Electronic Arts party, and it was very colorful, very fun, and VERY difficult. Retail should be under $50. (A review of ST chess programs will be appearing in an upcoming issue of START.)

Thanks for bearing with us. We've tried, despite various technical gremlins, to give the Atari community as much information as quickly as possible. Among other features, we hope to present DIGITIZED PHOTOS on ANTIC ONLINE which you can view. Our goal is to become one of the fastest sources of Atari information (including visuals) short of a business report on CNN.

Again, thank you, and keep watching ANTIC ONLINE for programming tips, graphics demos, and late-breaking news reports from the Atari community.

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CEBIT '87 ST REPORT
PART #1: HARDWARE
EXCLUSIVE TO ANTIC ONLINE
BY
CHRISTIAN SCHMITZ-MOORMANN
APRIL 4, 1987

What is CeBIT?

The CEBIT fair at Hanover supposedly is the world's largest show in bureau and information electronics. CEBIT stands for: Computer, Electro nics, Bureau, Information and Tele communication. On an area of more than 205,000 square meters in 12 halls more than 2200 firms showed their products.

This year's show had snowstorms causing chaotic traffic situations so even the usually reliable Bundesbahn (federal train service) had delays of up to 6 hours. For this reason the show was nicknamed 'Schnee-BIT' (Schnee is German for snow). But anyway, though we arrived late, we finally got there and it became a very interesting day.

HARDWARE...

ATARI presented itself in its newly adopted white-and-blue look and on 50 1040s the software-houses presented their new products.

Before looking at the software I was pulled to the new MEGA-STs and that experience was great. The design was appealing and the keyboard a lot better than my 1040's. Helas, the MEGAs won't hit the stores before May or even June due to a slight timing- problem with the shifter-chip.

This error results in small vertical black lines on the display. The delay in the MEGAs will probably also affect the PC since ATARI said they would only put out the PC after the MEGAs to show their preferences. But with Jack Tramiel one never can be certain. The last all new product was the laser printer. Connected to one of the MEGAs it was turning out page after page.

The quality was as can be expected from such a machine. The printer emu lates a Diablo 630 and supports GDOS. According to a German ATARI-representative they are working on post- script.

Naturally ATARI was not the only to show new products. On the hardware side there was also HEISE, a German publishing-house, that showed its new version of the real-time language PEARL/RTOS system which was developped at Hanover university. It was simultaneously showing a graphic (a more sophisticated version of the only too-well-known jumping-ball) and controlling a robot that balanced a glass of water.

BASIS-O, who formerly built APPLE compatibles, showed an interesting new integrated scanner-printer/plotter and telecopier. Within 4 minutes it is possible to send or receive a letter in handwriting or with graphics on any public or private telephone. The device incorporates an acoustic coupler and can be run on rechargeable batteries. The resolution is is 4096 pixels per line and 1125 lines per page.

PRINT-TECHNIK presented its 3rd-generation digitizers. Their new Realtizer digitizes a picture with up to 16 gray-levels in less than one second. It now plugs into the ROM-port.

Its big brother, the PRO 87, digitizes 1024 pixels in 512 lines and 128 gray-levels. Both digitizers come with a toolbox-software and the PRO 87 also includes the necessary hardware for real-color images. PRINT-TECHNIK also offers a Genlock-interface for the ST.

Other products are a Meteosat weather satellite receiver, a sound digitizer and a memory-oscilloscope.

GTI, a Berlin-based society, presented a VMEbus-interface that plugs into the DMA-port and includes a full bus-arbitration-logic and supports interrupts. The DMA-port is pulled through so that a hard-disk can still be used.

Another bus that opens your ATARI is produced by RHOTRON. It is plugged onto the CPU and has eight slots.

Since installing the bus voids the warranty RHOTRON also offers a PC-like case in which the ST and the bus and a stronger power supply are incorporated.

Rhotron offers several cards to fill the slots, from 2-Meg RAM to multifunction-cards they have just about everything, or how about a math-coprocessor?

A barcode-reader can be obtained from CDS in Freiburg/Rhine valley. Barcodes invade our lives, they tell you what is in a specific product, which film you just rented and with such a reader you can find out yourself.

LINDY, a maker of printer-cables and other computer add-ons also presented an oscillograph. It can be used as a sound-sampler or as a digital oscillo scope.

The last interesting hardware I wish to present was not on the show, but since Desktop Publishing is becoming more and more important, I feel it should be mentionned.

HEIM-Verlag, another young publishing house, that was the first in Germany to have a magazine purely dedicated to the ST-line (STcomputer-mag), offered a program and interface to connect an ST to a CompuGraphic-MCS-layout station called 'transmit'. They use it to make their magazine. And as far as I can tell it seems to work pretty well.

END OF CEBIT '87 ST REPORT - PART 1

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CEBIT '87 ST REPORT: PART 2
LANNGUAGES AND BUSINESS SOFTWARE
EXCLUSIVE TO ANTIC ONLINE
BY
CHRISTIAN SCHMITZ-MOORMANN
APRIL 4, 1987

There was very interesting software for the Atari at CEBIT '87 too. I tried to look for things that haven't (yet) reached the other side of the Atlantic. Let's start with new languages. Although there are many already, even more languages are offered for the ST. Some people even say that there is no other computer with more different languages available -- languages not only for developers.

Again, HEIM-Verlag has something for us. It is a powerful version of PROLOG that also supports GEM. The package consists of a compiler/interpreter system with around 140 functions. It is called SALIX-PROLOG and costs around $120.

More sophisticated is MProlog by

Berlin-based Epsilon. MProlog is also available on other computers like VAX, Macintosh, IBM etc. It costs around $500 (?), and is designed for professional use.

SMALLTALK-80 in its version 2.1, which has been ported to the ST by a group from Dortmund-university, is an object-oriented language which means that all is done by sending messages betwwen objects.

Another language with an unusual concept is FORTH. LMI put out its FORTH-83 compatible version for the ST. This version is also compatible with other LMI-Forths for other computers. Alas, it does not support GEM, but it at least supports the TOS functions.

A language that becomes more and more interesting for the hobbyist is MODULA-2. MEGAMAX is turning out its version and probably will be a worthy competitor against TDI.

Not only new languages were shown. BASIC in new and more powerful versions enjoys a glorious revival. Three different BASIC systems were shown.

First there was GfA who showed version 2.0 of their interpreter and the almost final version 1.71 of their compiler. Frank Ostrowski, the author of GfA-BASIC is now busy writing a GfA-macro-assembler, lets wait and see. GfA will be represented in the US by MICHTRON.

The second BASIC shown was OMIKRON-BASIC which comes on a plug-in board for the ROM-port. It is even faster than GfA-BASIC in most functions, it calculates up to 19 decimals, supports matrices and a C-standard GEM-inter face. It is MBASIC-compatible and there only is one problem. By the time it was published, most people had already bought GfA-BASIC.

The third newcomer has another nice feature. True-BASIC is available for ATARI, IBM, AMIGA and MAC and between these it is fully portable. Like OMIKRON it offers matrices and it supports the full new ANSI-standard. It also has a special library for 3-D graphics.

BUSINESS...

There were quite a few applications presented, but most programs were dedicated to the German market with special attention to the German tax-system and other uniquely German necessities. Among those that are useful for any businessman was LOGISTIX, an integrated software-package which includes a spreadsheet, database, timeplanner and graphics. The demonstration was quite impressive, and the product seems very capable, but I'm not an expert in spreadsheets.

dB-MAN was presented in a German version which still has some of the old bugs, of which the most prominent is failure to turn off the blinking cursor upon exiting. But apart from this dB-MAN is a very powerful piece of software and especially the incorporated programming-language with its abundance of commands and functions hardly leaves any wishes.

Another database was presented by ATARI itself. ADIMENS-ST is fully GEM-integrated (well almost), extremly fast, powerful and a high-quality product. To bad it still lacks a programming language, which for me as a developer is indispensable. ATARI said it is underway, though, and should be available by July.

A real goody was a piece of integrated software which was presented by a Yugoslavian firm. Its name is 'STEVE' and it is the most flexible spreadsheet I've seen, yet. One can do everything and nothing with it. It can be used as a spread-sheet naturally, a database, text-editor, graphic editor and mailing list facility. It allows user-definable function keys, two keyboard-tables, several fonts, abbreviations and dictionary in the text-editor and more. The program will retail in Germany for around DM 250, which is about $110, but that was the maximum price. I'm waiting for this program!

END OF CEBIT '87 ST REPORT - PART II

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CEBIT '87 ST REPORT: PART 3
WORD PROCESSORS, TOOLS &
MODEM SOFTWARE
ANTIC ONLINE EXCLUSIVE
BY
CHRISTIAN SCHMITZ-MOORMANN
APRIL 4, 1987

CEBIT '87 had plenty of Atari word processors to offer. DATA-Becker (their products are sold by ABACUS in the US) presented their new BECKER-text, the new version of TEXTOMAT ST (TEXTPRO). There are no more control-codes in the text (WYSIWYG) and it features an indexing function as well as an automatic table of contents. Graphics can be included and computation and tables are incorporated.

Most functions can be reached by either the mouse or a key combination. It still has the C-Source option and now offers different fonts.

As usual DATA-Becker has produced several books, some of them are new versions of old titles, and I found several addressing the 'professional' programmer, who still can learn a lot from these books. Of course they have a lot of books for beginners as well, but I don't know which books ABACUS will publish and which are just for the German market.

Again, ATARI offered an alternative to the just described program. I'm talking about the finally released '1st Word Plus'. This program cures most of the errors and oddities of the original 1st Word and adds some nice new features as well. It is going to be really difficult to make a choice between 1st Word Plus and BECKER-text since both have nice features the competitor does not have and as well there are still wishes I have for both.

A third text-editor which was not on the show, but has caused a lot of noise is SIGNUM! which is retailed by Application Systems in Heidelberg. SIGNUM! stands somewhere between a word-processor and a Desktop Publishing system. It allows up to seven fonts of 128 characters each at the same time. A character can be just about everything and an editor to create new character-sets is included. SIGNUM! offers macros and very powerful placing utilities. A reviewer called it a calligraphy-system. (Calligraphy is the art of embellishing writing).

TOOLS

G-DATA, based in Dusseldorf, has been known over here for its quality utility software. They have improved some of their old programs and added new

ones including a program to make a Hard disk capable of auto-booting and several programs to make backups of a hard disk which has some nice features including data-compression, and file size of more than disk size.

The most powerful tool for disk-repair and editing is T.L.D.U. by FOCUS. This firm has made disk-monitors for years. T.L.D.U is fully programmable and the disk comes with some example-macros which offer a good way to learn the necessary commands. The programming language is very C-like. The current release does not read or write some copy-protected disks, but an update has been promised for June. T.L.D.U. also includes a disassembler and an extensive manual.

KUMA presented its late releases of K- SWITCH and K-RESOURCE.

TELECOMMUNICATIONS

Finally there is some movement in the German mailbox and telecommunication community. Some good programs were at the show. DELUXE-Term supports GEM and is somewhat equal in comfort to FLASH, but it is possible to use 1200/75 baud which is necessary for BILDSCHIRMTEXT, the German version of VIDEO-TEXT services.

Another program, again offered by ATARI themselves, is 1st Terminal, that is completely GEM-based in conjunction with PROFIBOX, an excellent mailbox program. It is even possible to select from the PROFIBOX menues using your mouse when utilizing 1st Terminal.

Both programs, the box and the terminal program have been written by Brain-Works from Rosenheim in Bavaria.

END OF CEBIT '87 ST REPORT - PART 3

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CEBIT '87 ST REPORT: PART 4
CAD GRAPHIC & MIDI SOFTWARE
EXCLUSIVE TO ANTIC ONLINE
BY
CHRISTIAN SCHMITZ-MOORMANN
APRIL 4, 1987

Hans-Bastian (HABA), which resides in Hamburg, has released its HABACAD-PL layout program. The program addresses only professional hardware-developers and the price of DM3000 ($1200) seems rather hefty. No GEM support, but powerful routing routines.

Quite a bit less expensive and for different customers is CAMPUS V 1.1. This program is fully GEM-integrated and has made quite some enhancements to GEM. It is quick and definitely a very usable drawing tool. Its price of DM700 ($330) may seem high, but it is really worth it. If only I had a use for it and a plotter!

On the lower end of the price scale is STAD a drawing-program for 2-D and 3-D objects. There are up to 15 2-D pages and an extra 3-D part. STAD offers the usual and some extra functions including sending/receiving via the serial port. The 3-D part is object-oriented like in EASYDRAW, the 2-D part is not.

However, it is possible to interchange data between the parts, thus allowing for a 2-D object-library. STAD also includes animation and 'realtime rotation'. STAD retails for DM 179.- ($90).

Only for color monitors are the two Director programs ART DIRECTOR and FILM DIRECTOR by ANDROMEDA. This Hungarian firm has always been good for terrific programs and these two programs are among their best. The ART DIRECTOR is a drawing and painting program, but it offers most unusual features and is very flexible. The FILM DIRECTOR could be described as a slide-show program. But it is much more. Objects that have been created using the ART DIRECTOR are put together in several thousand frames, a background and music can be added and you have made your first animation-picture.

If you have the breath, it can take up to three hours. The directors import all kind of other graphic formats and when you add a video-digitizer there is no limit to your imagination.

SOUND

Talking of music. There are some powerful new programs that allow even the non-musician to create nice melodies and sound-effects.

MUSIX 32, already in an enhanced version, allows programmers to add sound and music to their programs, which is played in background and interrupt-driven.

Besides putting in the score it is possible to define the dynamics, the sound-wave and to perform transformations. Once you are done you can make a printout and incorporate the music in any C-, Pascal, or GfA-program. Other languages can also be used. MUSIX 32 has been created by the famous team of TOMMY SOFTWARE.

If you are interested in synthesizers and own an ATARI you won't get around STEINBERG. This firm has produced software and hardware already in the days of Commodore 64, but their ATARI programs and add-ons are first-rate. They offer everything from a sequencer (TWENTY-FOUR 2.0) to score-printing programs (MASTERSCORE), editing kits (pro16+) and their SOUND WORKS series, powerful tools for several synthesizers which help in designing new sounds, editing and mixing samples and much more.

GAMES

Although CEBIT is dedicated more to the office than to leisure there were some games. MICRODEAL showed among more serious pieces of software their KARATE-KID II and ELECTRONIC POOL programs. TOMMY SOFTWARE showed their products TRASHHEAP and DIZZY WIZARD which seemed quite interesting.

FINISHING UP

A program I could not classify, but which I found a very appealing possibility to learn is 'SKYPLOT plus'.

Just about anything that has to do with astronomy is in this program. Calculate eclipses, conjunctions, trails of selected comets or planets and stars. Two databases for the stars, one with 610 and one with 15,383 stars are integrated. It is possible to find out how the night-sky above your house looks like, by putting in your geographical position. This program has much more possibilities. It retails for DM 200,- ($100).

I know that many things were described much too superficially, but this report was intended to give you an idea of what is happening in ATARI's stronghold. ATARI has sold over 120,000 STs (all models) in Germany alone. ATARI Germany has made up for almost 30% of ATARI's sales in 1986.

END OF CEBIT '87 ST REPORT

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ANTIC'S JUNE '87 CES REPORT
OPENING DAY OVERVIEW - MAY 30
BY
NAT FRIEDLAND, ANTIC EDITOR

* Atari's 8-bit computer line is far from dead -- with a new double-speed, double-density 5 1/4 inch disk drive due this summer, as well as the long-awaited 1200 baud plug-in modem and the 80-column box...plus the XE Game System that comes with 64K, a keyboard, a light gun and Flight Simulator II.

* The ST has yet another new wave of remarkable and mind -boggling products on the way. Within our first hour at CES we saw a 4-megabyte memory board that goes into any ST without soldering, and the Hybrid Arts ADAP Soundrack CD- quality stereo sampling and editing system that competes with the vastly more expensive Synclavier and Fairlight in high-end MIDI.

And these are just quick first impressions from the opening hours of a Consumer Electronics Show that supposedly was not going to produce any major new Atari announcements...
The first day of CES is still underway as I write this on Antic's trusty Radio Shack 100 in hopes of catching a special Saturday merge that ANTIC ONLINE has arranged with CompuServe. So let's get right to the opening round of news:

8-BIT UPDATE

We'll start with the good news for 8-bit users. The XF551 disk drive is the big surprise. It's a compact 5 1/4 inch drive in XE gray, about 3/4 the size of the now- discontinued 1050 drive and priced in about the same $160 range as the 1050. The XF551 is also claimed to be 2.9 times faster than a 1050 and boasts true double density -- as well as automatic compatibility with every other density format ever used for the 8-bit Atari. It seemed clear from talking to a number of Atari sources that a 3 1/2 inch disk drive for the 8-bit computers is now unlikely to be produced.

The XF551 drive will have a new ADOS operating system which is nearing completion by OSS, the creators of DOS 2 and DOS 2.5. Promised features of ADOS include a tree structure allowing directories and easy toggle between menu or command operations.

According to Atari's Jose Lopes, the key engineer/ designer of the new XE products described in this dispatch, the first XF551 drives can be expected to start trickling into the stores by July. The same July arrival date now holds true for the 80-column XEP80 display box (reviewed in the July '87 Antic) and the new 1200 baud SX212 modem. Valdes says both products have been delayed by a wait for delivery of main chips, but all other components and packaging are stockpiled in readiness for assembly at Atari's Taiwan factory.

AtariWriter Plus 80 was operating on the XEP80 in a razor-sharp 80-column display at the Atari Booth. The SX212 modem will be bundled with a new version of Keith Ledbetter's famed Express software which the author is scheduled to demonstrate later in the show.

XE GAME SYSTEM

The first working pre-production prototypes of the XE Game System were on view atop the roof of Atari's large booth structure, along with a real Cessna airplane that Atari somehow got into the new CES North Hall. The Game System is essentially a two-piece 65XE computer that costs as much as a 130XE.

But instead of 128K memory, you get a light-gun, a joystick and three games -- Flight Simulator II on cartridge, Missile Command in ROM and a pistol game called Bug Hunt. At least 18 arcade and disk best-sellers are now promised for Atari cartridge by Christmas, including 1 On 1, Gato, Midnight Magic, Karateka, Choplifter and Blue Max. Most titles are to sell for $19.95 each.

Atari Software Director John Skruch says the XE can get as much as 256K on a bank-switching cartridge. Flight Simulator II only required 128K. Two hard-hitting TV commercials for the Game System were on Display. The system is designed to be sold in separate pieces overseas. Eventually the light-gun will be available in the USA as an 8-bit peripheral. An ST mouse will work on the XE Game System in trackball mode --

ANOTHER ST BONANZA

This CES had another dazzling array of ST computer products on display. We'll be looking at a lot more of them in our later reports. During just our first hours around the crowded Atari area, here's what we found that seemed especially impressive:

Micro D of Canada was showing a prototype 2/4Mb memory upgrade board that is supposed to install inside any ST without soldering. The Data-Free Board will sell for $159 without RAM chips. The 4-megabyte upgrade requires 32 chips and the 2Mb takes 16. The chips cost $30 each from Micro D or you can shop for a better price on your own.

Hybrid Arts, the king of Atari MIDI developers, was showing their $1995 ADAP Soundrack digital sampling system, which will be on sale in July. ADAP offers the sound quality of compact disks -- in true stereo if you get a dual hardware setup. On a stage in the Atari area, ADAP was in action -- effortlessly pulling selected portions off any tape and manipulating the sound in real-time with a simple visual interface. Sounds could be played back in reverse, cut and pasted, stretched, faded and otherwise manipulated, as fast as you could click a mouse.

Frank Foster of Hybrid Arts told Antic that Tom Hudson is looking into the ADAP math co-processor box for speeding up certain math-intensive operations of his graphics software (DEGAS, CAD-3D) such as ray tracing.

Springboard was showing their little-publicized ST conversion of Certificate Maker at the Atari booth.

Shelbourne Software's 3D Breakthrough, the first ST game using the Stereotek 3D Glasses, was a spectacular sight. You move through an elaborate maze by shooting your way through flashy barriers. The disk will also include a non- 3D version that doesn't require glasses.

Sorry, gotta cut off now to try for same-day upload. Lots more Atari news from CES will be in our follow-up reports on ANTIC ONLINE.

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ANTIC'S JUNE '87 ATARI CES
REPORT #2
8-BIT NEW PRODUCT ROUNDUP
BY
NAT FRIEDLAND, ANTIC EDITOR
JUNE 1, 1987

"Okay, all those letters this month from Antic readers have convinced us there's still an 8-bit Atari market out there," said Springboard Software president John Paulson at his company's CES booth. "You'll be glad to know that Springboard has now started work on an 8-bit Atari version of Newsroom.

Newsroom is a popular entry-level page layout program for easy newsletters. Springboard is already showing an ST version of their Certificate Maker here, this product is currently shipping.

Good news for Atari graphics users who have been trying to find a touch tablet. Suncom's Animation Station for XL/ XE is now available. The included software provides many pre-drawn pictures as well as automatic shape generation. The tablet can be used in place of joysticks or paddles to control any standard Atari software, according to Suncom.

At Antic's suggestion, Suncom is now looking into converting their convenient keyboard-mounted joystick for use with the Atari 8-bit and ST.

Strategic Simulations Inc. had extra reason for celebrating at their suite, high above the Chicago River. Last week they signed a contract with TSR to start the first computer versions of the original Dungeons and Dragons games. You should be able to play D&D on your Atari by Christmas.

Datasoft, now being released through Electronic Arts, has two welcome 8-bit titles due out before July. Video Title Shop ($29.95) lets you create colorful animated sequences with graphics and moving text -- which can be transferred to your videorecorder tape via standard electronics cables. Video Title Shop includes the Micro- Painter Plus paint program and a library of built-in borders and screen images. Scrolling, position-changes, fadeouts and a whole range of video special effects are supported. A second disk of video "clip art" for the program will also be released this year.

Also from Datasoft at $29.95 is the second installment of Alternate Reality -- The Dungeon -- which seems to play much faster and more conveniently, with less disk swapping than the earlier installment of this large-scale graphics adventure game.

Most of the unreleased software on display at CES was promised for shipment by early summer. One of the few new packages I was actually able to bring back for review is...Virtuoso. This is the long-evolving music/graphics storyboard system that Antic previewed almost two years ago. The XL/XE version is $49.95 and the ST version is reportedly well along in development.

Infocom had two of its top adventure programmers on hand at the show -- Dave Lebling (Lurking Horror) and Steve Meretzky (Stationfall, Hitchikers Guide). Brian Moriarty was left home in Boston to continue working on the new Beyond Zork project which will blend role-playing with the text adventure format. Activision, Infocom's parent company, had only two arcade cartridges for the Atari 2600, Kung Fu Master and Commando.

The fourth (and final) ANTIC ONLINE report from the June '87 CES will feature tonight's second annual ChicagoLand Atari Users Group dinner meeting, which is attended by many top executives and programming professionals from the Atari world.

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ST NEW PRODUCT ROUNDUP
BY
NAT FRIEDLAND, ANTIC EDITOR
JUNE 1, 1987
ST COMING ATTRACTIONS

What looked like a very powerful and easy-handling 2-D drafting and drawing program was being demonstrated by Xetec of Salina, Kansas (makers of the Grafix AT which has been reviewed in Antic). SCAD gives you pages for 16 ST drawings in RAM. All commands can be operated from GEM or from the keyboard. The $99.95 program is due in September and will not be copy-protected. Page sizes can be defined as large as 32 X 32 inches and many powerful graphics editing tools are built-in. SCAD can convert images into DEGAS format. We'll also be reviewing Xetec's new Printer Enhancer, a $249.95 buffer/switcher with 8 built-in type fonts.

A software team from Venezuela was showing MasterCAD 3-D, a $199.95 program that converts any 2-D image into real 3-D and seems quite easy to operate. The current version requires 1Mb and monochrome. Final U.S. distribution is still being set.

Passport Designs, a leading MIDI software house, is rushing to convert its first ST product -- Master Tracks Pro, a high-powered, user-friendly 64-track sequencer that has been winning rave reviews on the Macintosh this spring. The Passport CES team told Antic that three out of four visitors to their booth wanted this product on the ST instead of the Mac.

Computereyes, a 1986 Antic Award Winner, is being shown at CES in an inexpensive $149.95 monochrome version (it can produce gray scales on the color monitor). This is the latest Atari video digitizer from Digital Vision. Their ST color unit will be reviewed in the August 1987 issue of Antic.

Another specialized new use for the ST is to run a graphics database for serious chessplayers. SciSys of London is showing two versions of ST ChessBase -- the software that current World Champion Garry Kasparov has been using to prepare himself four tournaments.

With Chessbase Sr., every recent tournament game of an upcoming opponent can be fed into the database and instantly examined from a vast variety of viewpoints to pinpoint potential weak points of play. You can see how an oppenent reacts to any standard style of opening or strategy. ChessBase Jr. works with the expensive Leonardo world-class chess computer and the ST. U.S. distribution for all these products was being finalized at CES.

An add-on to PrintMaster Plus, the Print Shop workalike from Unison World, will be a Fonts and Borders disk. Price is not yet set.

GAME GALLERY

Microprose had a customized Link Trainer "flying" on the CES floor as it was piloted with the new Gunship helicopter simulation. The ST version is still under development.

Mindscape, which hosted a Sunday rock oldies concert for 1,000 (Bo Diddley, Sam & Dave) showed two $29.95 ST color games designed in England. Q-Ball is a 3-D billiards game played inside a cube where you can adjust the gravity and line up your shots off any wall. Plutos is a shootout where your rocket flies over the scrolling surface of the huge enemy mothership and attempts to destroy it.

From England's Psygnosis, creators of the visually awesome graphic adventure game Brataccas, comes another lushly-detailed extravaganza. Barbarian moves a Conan-type hero through an a vast, scrolling underground kingdom -- color only -- where monsters and hordes of enemy guards must be overcome on every screen.

Electronic Arts is starting to crank out some ST titles too. An enhanced version of Music Construction Set -- with MIDI -- is due in July for $39.95. Other new features are direct waveform editing and a jukebox playback mode.

EA has also taken over distribution of the First Byte talking ST software. First releases are MathTalk, a flashy arithmetic drill for youngsters, and a talking computer version of Mad Libs, the poplular series of humor books where you add inappropriate words to prepared storylines.

Still more from Electronic Arts, a kind of super- Diplomacy strategy game called Empire, where you conquer weaker parts of the world and force them to build weapons and raise new armies for your war machine. But your enemies are just as ruthless, and you can also start the game by re- drawing the map of the world to suit your own tastes.

Logical Design Works has a whole line of fast-moving ST gambling simulations for $34.95 each. Vegas Gambler combines blackjack, roulette, slot machine and poker machine. Other titles available are Vegas Craps and Club Backgammon.

From Canada Jagware is making its ST debut with Alien Fires, a color-only 3-D space maze arriving this summer.

AVATEX 2400 BAUD MODEM

Avatex, well-known for its low-priced Hayes-compatible modems, now has a speedy 2400 baud unit. List price is $319 but previous Avatex modems have been dramatically discounted.

We ran into some offbeat items for souvenir-hungry Atarians. Classic Covers offers protective covers for Atari computers, monitors, disk drives and printers -- all emblazoned with a big golden fuji symbol and the Atari name.

Another company was showing credit-card-sized pocket calculators featuring the fuji and Atari name.

By the way, Atari used the CES opening to announce that they had a 45% increase in first quarter sales this year -- $65.1 million -- and they were making a 2-for-1 stock split.

This news bumped up the price of Atari stock by about $5, to over $30 per share.

A final ANTIC ONLINE report from the June '87 CES will feature tonight's second annual ChicagoLand Atari Users Group dinner meeting, which is attended by many top executives and programming professionals from the Atari world.

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ANTIC'S CES JUNE '87 WRAP-UP
SECOND ANNUAL ATARI ROAST
BY
NAT FRIEDLAND, ANTIC EDITOR

Towards the end of the Consumer Electronics Show, we got our first look at some additional important ST software:

Broderbund is jumping into the ST marketplace with Art Director and Film Director, a DEGAS-quality paint program that will be packaged together with an animation module for $79.95. This software, originally designed by the Hungarians who did ST Battlezone, is expected to ship in August. Features include: rescale, stretch, distort, bend, bulge, spin, perspective, scroll and spin.

Not quite as far along is the ST version of Broderbund's all-time bestseller, Print Shop. It is due this fall at $49.95 and will be similar to the sophisticated Macintosh version. Also coming from Broderbund this fall is the ST Karateka at $34.95.

Timeworks Desktop Publisher this fall will join the company's ST word processor, spreadsheet and database software.

Spitfire 1940 is an ST flight combat game coming from Avalon Hill this summer. We also picked up an 8-bit review copy of their Guderian wargame.

And back at the bustling Atari booth, we got a look at Bentley Bear Goes To School -- a new ST educational series programmed in Israel and featuring the lovable bruin from the Crystal Castle arcade game. Four titles for grades K-6 are to be marketed within 30 days and there will eventually be some 20 in the series. The animation in each title such as Magical Mathematics is of very high quality and the packages will sell for $19.95 apiece.

ANNUAL ATARI ROAST

In its second year, the CES Monday night dinner of the ChicagoLand Atari Users Group (CLAUG) has become the Atari community's de facto annual roast.

On the evening before CES's final day, CLAUG invites a busload of executives and programmers from Atari and independent companies to dinner at a college dining hall in the western suburbs, about as far from town as O'Hare Airport.

After the visitors refuel themselves following a hectic day at the show, the event becomes a regular CLAUG meeting with every professional making a statement and answering questions.

This year Atari vice president Leonard Tramiel revealed that a 16-bit graphics workstation is in a fairly advanced stage of development. This would be compatible with the ST but much more powerful. He said that any 32-bit multitasking computer would need to run Unix, but it was a problem deciding which competing version of Unix would be best.

Marketing communications director Neil Harris stated that ST Word Perfect, due in July, runs five times faster than the bestselling IBM version.

Harris explained that Atari's top priority at this particular CES was to

revitalize the 8-bit line by packaging a redesigned 65XE as a high-end game system, in direct competition with Nintendo and Sega. That's why the Mega ST and the Atari Laser Printer were not displayed this time. According to Harris, the XE Game System was receiving an enthusiastic early response from mass-market purchasing agents.

MORE XF551 AND ADOS

Here's some additional details about the new Atari 8-bit disk drive and other Atari hardware.

Essentially, the XF551 is an adaptation of the standard disk drive mechanism being used for Atari's IBM clone. The 360K, double-sided, double-density 5 1/4 inch disk drive runs 2.9 times faster than the Atari 1050 and is due in the stores this summer at a $199.95 list-price.

The XF551 can automatically adapt itself to today's single density and enhanced density DOS disks. However, ADOS, the new OSS operating system coming with the XF551 includes a tree structure allowing subdirectories, easy switching between menus or keyboard commands, and a high degree of file recovery safety.

Bill Wilkinson of OSS says that ADOS will run on any Atari-compatible disk drive, from the old 810 to a 16Mb hard disk. Although 8Mb is the upper limit for efficient operation, a larger hard disk can be partitioned into several logical drives. DOS 2 and 2.5 files can be read into ADOS, but ADOS is not fully compatible with the older operating systems.

Along with the XF551, the Atari products announced in January at the previous CES are now also scheduled for summer release. This impressive list includes the Mega ST in 1, 2 and 4 megabytes, a $1,500 laser printer, the Atari PC clone, the $150 XE Game System version of the 65XE, the 80-column XEP80 display box and the 1200-baud SX212 modem.

By the way, Atari is going back to Chicago in three weeks, where it will show off the ST's MIDI power and become the first personal computer company ever to exhibit at NAMM, the musical instrument industry's show.

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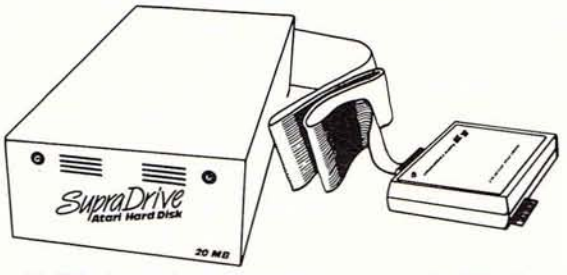

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BY NAT FRIEDLAND
ANTIC EDITOR
6/21/87

With all the other Atari Fairs that took place during the past 12 months and the huge Consumer Electronics Show just three weeks ago, it was surprising to find so much new to see last weekend during the hastily-organized World of Atari Faire at the year-old Santa Clara Convention Center

But several unfamiliar companies with impressive ST software made their Atari Fair debuts last weekend. And a near-production version of the Atari SLM804 laser printer had its first public showing. This report concentrates on products that have not been reported on previously.

The Atari laser printer is smaller and lighter than most current models, but seems just about as fast and sharp. It was operating in Diablo 630 emulation with a 4Mb Mega ST running a pre-release version of the Microsoft Write word processor with a WYSIWYG display. The laser controller board is in a modem-sized box cabled between the ST's high-speed Direct Memory Access (DMA) port and the printer. This controller box also has a second DMA port for connecting a hard disk.

This 300 dots-per-inch printer supports Atari's GDOS (which automatically uses the highest resolution available to a printing device). We picked up a selection of the sharp graphics and muli-font printouts that the Atari SLM804 kept churning out throughout the day. Late summer or September is the current estimated market arrival for the Atari Desktop Publishing System.

At a neighboring booth, Word Perfect was showing a near-beta version of the forthcoming ST edition of its bestselling word processor. The GEM-based software, due in September, looked extremely fast and powerful. It will list at $395 but is often discounted by more than 50% in the IBM version. The WP rep said that the company is working closely with Publishing Partner's developers to assure immediate desktop publishing compatibility for the word processor.

Programmers will love Omniware's new Edit/Booster, an ST text editor that also generates GEM code by mouse. Select "Draw A Circle" from a drop-down menu and the GEM code apppears in your program. The version currently on sale just works with C, but updates for GFA BASIC, Personal Pascal and Modula-2 are promised soon. Omniware, based in Bellevue, Washington also showed a desk accessory controller for the widely used Hewlett-Packard Laserjet printer and an H-P terminal emulator.

Iliad Software of Orem, Utah, another new entry, showed a powerful, user-friendly CAD/drawing program, Athena II, selling for $99.95. Athena requires a 1Mb ST, but functions in either color or monochrome. Coming soon is a circuit-testing simulation program called Circuit Maker. The company was also showing a multiuser, multitasking operating system, PDOS, which is similar to the system used on 68000-based VME workstations.

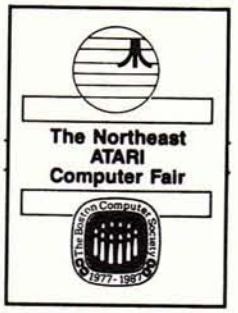
A wide-ranging product line of specialized business applications for the ST was shown by Hi-Tech Advisors of Winter Haven, Florida. Their $199 titles included Church Manager, Service Station Manager, Video Store Manager, Inventory Pro and Sales Pro Plus. Mail Pro handles custom mailing lists and form letters for just $69. SBT of Sausalito, California kicked off a line of dBASE III business accounting modules based on the ST's dBMAN clone.

Beckemeyer Development Tools of Oakland, California showed their latest addition, a touch-screen restaurant menu system. The demonstration model for a Chinese restaurant was almost frighteningly complete and efficient.

Two image scanners were shown at the fair. Navarone, of Sonora, California had a $1,239 ST system including the Canon IX-12 scanner. The simpler $99.95 IMG Scan from Seymor-Radix of Irving, TX used a small box that tapes to the print head of any dot matrix printer that supports graphics.

Old-timer Lou Schwing of Astra Systems was gleefully demonstrating the ruggedness of his HD+ unit which combines an 20Mb hard disk and a double-sided ST 3.5" disk. The HD+ was notably cool and even kept operating as he waved it in the air and laid it on its side. DeskCart, a $99.95 cartridge from Quantum Micro of Liverpool, New York is a real-time clock/calendar with a full set of Sidekick-type desk accessories including a filer, calculator, address book, notebook, macros, RAMdisk driver and other utilities. The cartridge format is claimed to save memory and operate faster.

The World of Atari was busy and profitable for most exhibitors throughout its Friday-Saturday run. The thriving Antic booth was showing upcoming ST graphics software from The Catalog -- Cyber Paint, a paint program that creates images for animation with Cybermate, and Spectrum 512, a smooth-lined, ultra-clear paint program that can display all the ST's 512 colors simultaneously.



DEVELOPERS CORNER

INTEGRATING 68000 ASSEMBLER CODE WITH C
(the Developers Package aka Alcyon C)

Copyright 1986, Gregg Hauser

This article will describe the techniques of integrating 68000 assembler code with the Alcyon C compiler in the Developer's Package ($300 from Atari). It will cover writing functions to be called by C, calling C functions, using the C preprocessor to implement "macros", and using the asm("..."); function to include assembler code into the C code.

I will assume you can pick up the rudiments of 68000 machine language from other sources. (I still use the 68000 chapter in the Osborne 16-bit Microprocessor Handbook from 1981.)

Why integrate assembler code with C code? Good question - I try to avoid assembler as much as possible, since I still believe that C code is easier to read. Some situations where you might want some machine language code: bit fiddling that is more difficult in C, determining a parity bit with software, writing your own bit block transfer routines (though why you would want to do THAT I cannot understand), or maybe implementing semaphores in a multi task environment.

GETTING STARTED WITH 68000 MACHINE CODE

Let your C compiler show you how it generates machine code. Save the .s file created by the C168.PRG. Just delete the RM.PRG %1.S line from your C.BAT file and create a new file with a name like CSAVE.BAT

Here is a simple "move a positive integer number of bytes" C function, followed by the code generated by the C compiler.

```
mov(t,f,n)
        register        char    *t;     /* destination address */
        register        char    *f;     /* source address */
        register        int     n;      /* count of bytes */
        {
        while (--n >= 0)
                *t++ = *f++;
        }
```

MOV Code Generated by Alcyon C Compiler (MOV.S)

```
     .globl _mov
     .text
     _mov:
     ~~mov:
     ~t=R13
     ~f=R12
     ~n=R7
     link R14,#0
     movem.l R6-R7/R12-R13,-(sp)
     *line 6
     move.l 8(R14),R13
     *line 6
     move.l 12(R14),R12
     *line 6
     move 16(R14),R7
     *line 6
     bra L4
     L3:
     *line 7
     move.b (R12)+,(R13)+
     L4:
```

```
     *line 7
     sub #1,R7
     bge L3
     L2:L1:tst.l (sp)+
     movem.l (sp)+,R7-R7/R12-R13
     unlk R14
     rts
     .data
```

The Minimal Hand Coded Equivalent Function :

```
     .globl _mov          /* make label  known */
_mov:
     move.l  4(A7),A0     /* get destination */
     move.l  8(A7),A1     /* get source address */
     move.w  12(A7),D0    /* get count */
     jmp     test_loop
loop:
     move.b  (A1)+,(A0)+  /* move a byte */
test_loop:
     sub.w  #1,D0        /* decrement count */
     bge    loop         /* loop if 0 or greater */
     ret
```

That's a lot of assembler code all at one time. Let's break it down.

PUBLIC NAMES

The C compiler adds an underscore to the beginning of all public names, so the C function mov is known as _mov to the assembler and the linker. The assembler and linker retain only seven significant letters in C names (plus the leading _ makes 8 total). If you are writing assembler code that does not need to talk to C, you can use eight letters without the leading underscore.

68000 STACK

The 68000 has a stack which C uses for all function arguments and automatic variables. Alcyon C (and most others, except for some flavors of Small-C) have the first argument on the stack at the lowest address, with each succeeding argument at a higher address on the stack. Register A7 is the stack pointer.

When a C function is first called AND BEFORE the compiler uses the stack, we will find the return address as a 4 byte pointer on the stack at (A7). The first argument is at 4(A7). If that argument is a short, character, or (in Alcyon C) an int, it takes up two bytes and the next argument would be at 6(A7). If the first argument is a long or a pointer, the second argument would be at 8(A7). In our case, the second argument is also a pointer, so the third argument (a two byte int) is at 12(A7).

Addressing the Stack

C routines compiled by the C compiler use the concept of a "linkage frame" to access variables on the stack, since C will be pushing arguments onto the stack. As a result, A7 will be changing within the function. C uses A6 as a pointer to the base of the argument area and the top of the automatic variable area. The map looks like this:

```
     Higher address on stack

     Argument n
     Argument n-1
     ...
     Argument 2
     Argument 1
     Return address
A6-> Previous register A6
```

```
      Last   automatic variable  declared
      Other  automatic variables
      First  automatic variable  declared in function.
           (DO  NOT  COUNT  ON THIS ORDER. It is NON PORTABLE)
      Whatever registers need to be saved by this function.
           (A0, A1, A2,  D0, D1, and D2 do NOT need to be saved if
           the function is called by an Alcyon C function)
      An extra long word for function arguments
A7-> Whatever else has been pushed onto  the stack.

      Lower address on the stack
```

HOW C STORES AUTOMATIC VARIABLES

Automatic variables are located at negative offsets from the A6 register, with the first declared variable apparently at the lowest address. If you have automatic variables declared in blocks within the function, space for them will be allocated at the same time when then the function is first entered. (The LINK instruction handles the allocation.)

REGISTERS AND USING REGISTERS

C functions can use A0, A1, A2, D0, D1, and D2 and do not need to save them. C functions must preserve A3-A5 and D3-D7 as well as A6 and A7 for the caller. Register variables will be put into A3-A5 for pointers and D3-D7 for data items.

68000 INSTRUCTIONS

Let us now look at the code produced for the mov function.

Some control directives and declarations appear first. .globl _mov makes the mov name publicly available. .text tells the assembler that the following lines go into the code segment rather than the data area or the block storage (bss) area. _mov: defines the start of the mov function. The lines starting with tilda define the "local" symbols.

The first 68000 machine instruction is LINK R14,#0 (equivalent to LINK A6, #0), which will push A6 onto the stack, set A6 to point to that position on the stack, and allocation an additional 0 bytes on the stack for automatic variables.

The second instruction, movem.l D6-D7/A4-A5,-(sp) will save the D7, A4, and A5 registers onto the stack since this function wants to use those registers, and will also push D6 for good measure (since this will allow efficient calls to one argument functions in Alcyon C).

With the C function linkage structure I've just described, the first argument is always at 8(A6), and the second will be at 10(A6) or 12(A6) depending on how big the first argument is.

So the next three instructions move the arguments into registers, the bra goes to the end of the loop so the loop end test need only be done once and each repetition of the loop only needs one branch. The 68000 allows a byte to be moved from one register pointer to another and both pointers to be incremented in one operation. The loop test is a simple one.

The end of the mov function consists of throwing away the extra long word. Then the saved registers are restored with the movem.l instruction. The UNLK instruction restores the stack pointer and A6 to their values when the function was called. Finally, the rts instruction returns to the caller.

If mov were expected to return a value, it would be returned in D0 (though some other C compilers for the 68000 will return data in D0 and pointers in A0, leading to no end of difficulties).

HOW TO WRITE ASSEMBLER ROUTINES

The assembler does not require many "directives" for simple use. If you need to put string literals or static

data into the function, use the .data directive in front of the data to be created, and then use the .text directive in front of your program code. (The C compiler again can produce good models for you to look at.)

ASSEMBLY LANGUAGE MAY BE HAZARDOUS TO YOUR HEALTH

Remember that the C compiler generates good code, that usually cannot be improved on more than 15 percent (rarely 30 percent). Also remember that if your program accesses the disk or prompts the user interactively that 15 percent of the computation time in a program may be inconsequential. For example, I do NOT recommend the assembler version of mov, since pushing the arguments onto the stack and making the call take time. Notice that we could NOT improve on the inner loop of mov. The only time we saved was by not pushing and popping stack arguments once per call and by not using the standard C linkage (LINK and UNLK).

The 68000 aficianados may comment that we could use the dbra d0,loop instruction instead of sub #1,d0 bge loop. But this instruction only breaks out of the loop when the count goes to exactly -1. If we change the C code to read

```
while(--n != -1)
```

we will find that the C compiler DOES use the dbra instruction!

So improve your algorithms, make the screens look better, and resort to assembly language only in those few critical areas where increased speed will be truly useful. With that warning, we go on to some obscure points.

CALLING C FUNCTIONS FROM ASSEMBLER

Calling C functions is easy. To start, look at the code the C compiler generates to call functions. But remember, C has put an extra long on the stack to hold the last function argument.

If you are calling a C function from your own routine, push the arguments onto the stack in reverse order. For example, to call mov to move a block of 64 bytes from the array pointed to by global pointer PATH to local array on the stack at -64(a6), you would do the following:

```
.data
.globl    _PATH          /* optional - in .data */
.text
.globl    _mov           /* optional */

move.w    #64,-(a7)      /* push length (last argument) */
move.l     _PATH,-(a7)   /* push source address onto  stack
lea       -64(a6),a0     /* get address of local variable */
move.l    a0,-(a7)       /* push destination (first arg) */
call      _mov
add       #10,a7         /* take arguments back OFF the stack */
                         /* count bytes accurately! */
```

If you need to pop information off the stack, the technique is to move from (a7)+ to your chosen destination, as move.w (a7+),_ind.

HOW TO USE THE C PREPROCESSOR TO IMPLEMENT "MACROS"

The assembler in the developer's kit does not support macros, which would allow you to "define your own instructions", nor does it seem to allow an include directive. You can of course equate names to constants with the = operator. You can do conditional compilation with the ifeq, ifne, ifle, iflt, ifge, and ifgt arithmetic "compare to zero" directives and the ifc and ifnc string comparison directives.

You can also use the C compiler preprocessor cp68 to allow you to create #define macros, #include other files, use #if and #ifdef expressions, and enclose comments in /* */ pairs. While this technique is a bit makeshift, you might find it useful for medium sized assembly language projects.

Create your assembler source files with a .s68 extension. Use the following batch file to preprocess and assemble modules:

```
CP68 -P %1.s68 %1.s
AS68 -L -U %1.s
```

The -P option to CP68 apparently causes it to not generate # lines indicating line number and source module name, which could confuse the assembler.

Multiple instruction #defines do not seem possible, since I cannot figure out how to include more than one assembler instruction on one line. Exclamation points and semicolons are not accepted as statement separators.

A FEW SAMPLE MACROS:

```
#define   ARG(b)          8+b(A6)
#define   ARG1            8(A6)
#define   ARG2            10(A6)     /* if first arg is an int */
#define   ARG3            12(A6)
#define   GLOBAL(label)   .globl     label
                                     /* unfortunately, we cannot */
                                     /* add ; label: to the macro
*/
```

HOW TO MIX ASSEMBLER WITH C CODE DIRECTLY

The Alcyon C compiler allows you to mix assembler code directly in with the C code, by including assembler code as a string argument to a "builtin" function asm, as

```
asm("ROR.B _symbol");
```

Multiple lines of assembler code can be generated by separating each instruction with a \n, so

```
asm("ROR.W _symbol\nROL.W 8(a6)");
```

will become two lines of assembler code.

This technique has a number of limitations. It is NOT portable.

The Alcyon C compiler does NOT use the names of static variables, but instead calls them L1, L2, and so on in order of appearance at the BEGINNING of the source file. If the static variable is declared after or inside a function, the numbering will be thrown off by other labels the compiler will generate.

You can access variables whose names are known publicly by preceding them with the underscore, so ROR.W _symbol will rotate the word symbol one bit to the right. You also can access local automatic variables and function arguments by preceding them with a tilda and using the a6 register as a base, so

```
pseudo()
      {
      int  i;

      asm("MOVE.W ~i(a6),d0");
      }
```

will move the (uninitialized) word from i on the stack into the d0 register (the normal function return register). You could also have written asm("MOVE.W -2(a6),d0");. If a variable is declared as a register variable (and the compiler has enough registers and puts it there), you may refer to it directly, as asm("MOVE.W #0,~regvar");.

Why use the asm("...") technique? To rotate a byte, word, or long without convoluted C code. To swap two variables without using a temporary variable. To Test and Set a byte in a multi-tasking environment. And not much else. Here is a "made up" example of exchanging two regions of memory:

```
     xchbuf(b1,b2,n)
          char *b1, *b2;
          int  n;
          {
#ifdef    C_ONLY
          int  tem;

          while (--n != -1)
               {
               tem = *b2;
               *b2++ = *b1;
               *b1++ = tem;
               }
#else
          asm("move.l     ^b1(a6),a0");
          asm("move.l     ^b2(a6),a1");
          asm("move.w     ^n(a6),d0");
          asm("bra        loop_test");
          asm("top_loop: mov.b      (a1),d1");
          asm("move.b     (a0),(a1)+");
          asm("move.b     d1,(a0)+");
          asm("loop_test: dbra d0,top_loop");
#endif
          }
```

Note that I wrote the C code first, tested it, and THEN wrote the assembler version. Leaving the C code in provides some useful documentation for this function. Also remember that this example is made up and does NOT save significant computer time compared to an xchbuf function in which register variables are used.

FINAL CAUTIONS ON USING asm("...")

You should be careful if you use the .data or .bss instruction. Finish the data declarations with a .text instruction so your program instructions do not get put in the wrong area. If you are using asm(), do not create labels consisting of L and a number, since that will conflict with local labels generated by the C compiler.

USING ASSEMBLY LANGUAGE FROM C - CONCLUSIONS

So there you have it: too many ways to use 68000 assembler from the Alcyon C compiler. Please remember my cardinal rule:

```
Write it in a higher level language first (C).
Test it.
Sell it (or at least find your market).
Find a better algorithm.
Use register variables wisely.
Find a better algorithm.
THEN convert to assembly language if necessary.
```

(Ed. Gregg is a Software Engineer. This article in an earlier form appeared in InSoft Newsletter.)

```
/************************************/
/*    Initializing a GEM program    */
/*                                  */
/*        By Stephen Mehalek        */
/*          Vice-President          */
/*      Stone Age Software Inc.     */
/************************************/
```

This month I decided to speak on the subject of initialization.There are so many things that have to be initialized correctly toutilize the GEM environment that I've decided to try and provideda skeleton of sorts to help with the process, and hopefully clearup some questions that you might have on the matter. The Init.doc that is included with this article contains some of the actual source code that we used to implement our encryption program for the ST. I suggest that you get a copy of either the encrypt program we are selling or one of out demonstration copies to aid in understanding this discussion. While it's not necessary to have the above, its nice to compare some of the source code with a working program.

The source code contained in this column was written in Alcyon C.The company I am working for, Stone Age Software, INC, justpurchased a copy of Lattice C for one of their projects. This means I am planning to write a review of Lattice C, as well as include some source code written in Lattice C, in my next column. In my next column I am also planning to begin a two part discussion of program optimization in C.

The init file contains the actual code that was used to implement the initialization of the encrypt program. The structure of the encrypt program follows a classic order of events:

Initialize the program.

If initialization is okay proceed to the main part of the program.

Close or tidy up the place before exiting.

It's simply amazing how many programs are written that follow this basic three part structure. If you look closely at the "main" routine found in "init.doc", you will see this basic structure in a slightly modified form. We still call the initialization routine first, but since we are concerned with various results of initialization we declared a global variable named "term_type" that is set based on the success or failure of various parts of initialization. Term_type was given it's name based on the fact that the variable conveys the type of close procedures the "close" routine is to preform. Term_type has been globally defined as an integer therefore all results returned by this variable are in numeric form. To avoid the problems of poor readability and possible confusion with the results, we used some defines to categorize the basic problems that could occur (these defines have been declared at the beginning of the "init.doc" file). The structure of the routine "main" translated to English would sound something like this:

(Initialization) Initialize the program and return the success or failure of various initializations in the variable term_type.

(Main) If the value of term_type is something other a success. Skip the main procedure and close up shop. If the value of term_type is success go off and execute the main body of the program.

(Close) Close or tidy up the place before exiting. What we close or tidy up is based on the value found in term_type.

Now that we looked at the basic structure our initialization and close procedure must follow, let's look at what those two procedures do.

If as in the case of Encrypt, we are writing code to operate in a GEM based environment, there are a tremendous number of items that need to be initialized to run a program. The first item on our agenda is to tell GEM that we have an application or program that we want to run. We do this by calling the appl_init() routine. If the results returned by appl_init routine, the results are returned in the variable gl_apid, are negative GEM had a problem trying to do initialize our program. If the results are negative we would cancel the initialization and return the type of cancellation in the variable term_type.

Reading through the code a little more we see a comment that I have left in the source code from before the program was completed. Basically I could never understand why there were so many handles, ids, and variables that seem to be the same. Well as it turns out each handle and id has its place, but for most of us all these handles and ids are confusing. The solution is to take somebody code that has already dealt with this problem and just use their stuff as a skeleton to solving the problem. You may do that with the "init.doc" that I have included. Getting back to the original point here, what is the difference between the phys_handle and the handle? Well if memory serves me correctly I believe that the physical handle identifies to GEM the handle you would be identified with when you write to the screen. The "handle" itself would identify you with that ominous quantity the virtual work station. The graf_handle call actually returns

data on the characteristics of text that can be written to the screen and the handle that the program will be identified by when writing text to the screen.

The next little tid bit

```
wi_handle=NO_WINDOW;
```

is in prepration for all those calls that have to be made to open the window on the screen. It basically says "Initialize the window handle to null since we haven't done a window calls yet".

After that we find the resource file to load into memory. This type of initialization is only appropriate when you have constructed one of those funny RSC files. The file "encrypt.rsc" is a perfect example of this, it contains all the menus and dialog boxes for encrypt that are displayed on the screen. If you aren't concerned with this simply remove this section from the code.

The next two subroutine calls, to initialize the work station and open the window are quite involved and will be discussed next month in more detail. I have included the source to these to help you along if possible. The open virtual workstation call, basically tells GEM to set up an imaginary work station for our program. The open window call sets up our window i.e. do we have any sliders, close buttons, etc.

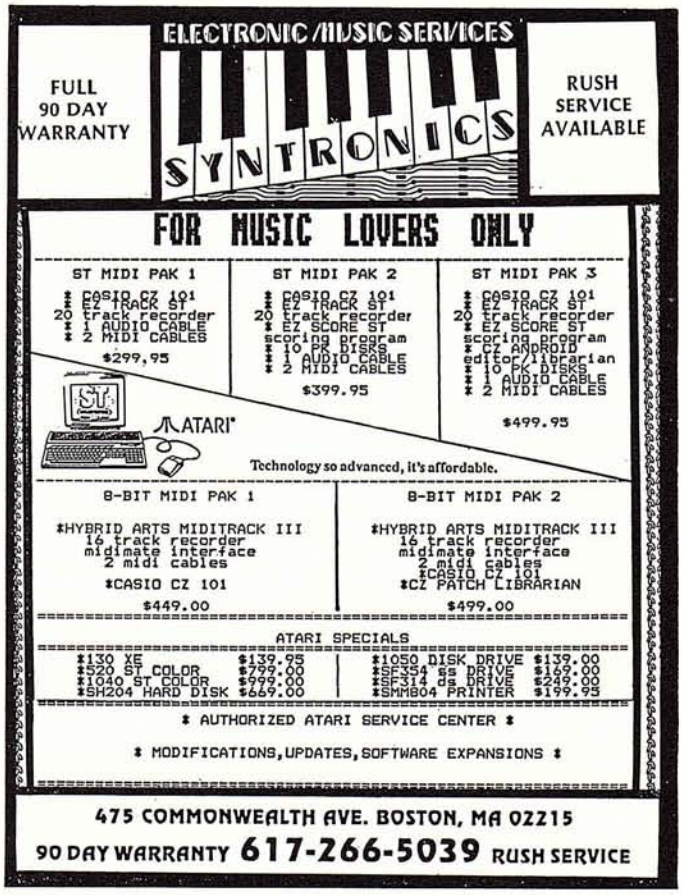
Next we set up the color lines are drawn with to black.Why we do this? Can you guess? I'll let you know next month. Consider this question a test, with the answer due by next months column. Hint: run the encrypt program to find out.

We now find the menu bar address in the resource file and place the menu bar on the screen. Rather terse, but that's all we are doing.

The do_display routine makes sure that the password display is turned off and that the menu item "Display passwords" is check marked. If your programs are concerned with menu's its a good idea to have a separate routine to initialize all the things correctly i.e are all things checkmarked that should be or are all items displayed in low intensity that should be?

The last items of interest are; Make sure that the term_type was set correctly, and make sure that the end_of_program flag is set to FALSE. For a better discussion on the end_of_program flag see my column written on the event_multi subroutine.

Now that we finished with the initialize lets take a brief look at the routine to close up the program. This routine works in an opposite fashion to our open routine, it reverse all the things we have done to initialize our program, but in reverse order (Sounds redundant eh?). About the only thing interesting in this routine is the fact that only certain things need to be reverse depending on where our program stopped it's self. If the program stopped via the users request we must reset everything. If this is not the case we skip down the list till we find what item term_type matches. When everything has been closed up in the proper order we return from the "close" routine to the "main" routine which returns us to the operating system provided we closed everything down right.



```
#define   WI_KIND  0 /****This window has no special characteristics*/

/****Termination codes*/
#define   NO_WINDOW (-1)
#define   NO_RSC (-2)
#define   NO_APPL_INIT (-3)

main()
{
     intialization();

     if(!term_type)
       multi();
     close();
}



/*********************************************************************/
/*                          Initialization                           */
/*********************************************************************/
intialization()
{
static    char fam_rsc_not_found[]="[3][NON-RECOVERABLE
ERROR!!!!ENCRYPT.RSC!FILE NOT FOUND][  TERM  ]";
         /****fam stands for form alert message*/

/****Initiate the application and get screen data*/
     gl_apid=appl_init();
     if (gl_apid==-1){/****Failed to initiate*/
          term_type=NO_APPL_INIT;
          return;}
/****Before this program is finished I need to find out what
the difference is between phys_handle and handle and why we need
two of them*/
     phys_handle=graf_handle(&gl_wchar,&gl_hchar,&gl_wbox,&gl_hbox);/**
**Get info on the system*/
     wi_handle=NO_WINDOW;
/****Load in the resource file*/
     if (!rsrc_load("ENCRYPT.RSC")){  /****Deal with any errors*/
          form_alert(1,&fam_rsc_not_found);
          term_type=NO_RSC;
          return;}
     open_vwork();

/****Initiate the window the workstation and window the program will
use*/
     if (open_window()==FAILURE){ /****If I can't open the window an
error has occurred*/
          term_type=NO_WINDOW;
          return;}

     vst_color(handle,BLACK);
/****Display the menu at the top of the screen*/
     rsrc_gaddr(R_TREE,MENUTO,&address_pointer);
     menu_bar(address_pointer,TRUE);
/****Speaking of menu's, why don't we call the display password
routine
```

```
to make sure our variable initialization is correct*/
do_display();

/****Initialize variables for passage to multi and pipe auditor*/
     end_of_program=FALSE;
     term_type=SUCCESS;
}



/*********************************************************************/
/*                              Close                                */
/*********************************************************************/
VOID close()
{
     switch (term_type){ /****Uses the trickle down approach to
terminating*/
     case SUCCESS:  /****Termination due to natural causes*/
          wind_close(wi_handle);
          graf_shrinkbox(minx+maxwidth/2,miny+maxheight/2,gl_wbox,gl_hb
ox,minx,miny,maxwidth,maxheight);
          wind_delete(wi_handle);
          rsrc_gaddr(R_TREE,MENUTO,&address_pointer);
          menu_bar(address_pointer,FALSE);
          rsrc_free();/****Free up memory used by RSC*/
     case NO_WINDOW:
          v_clsvwk(handle);
     case NO_RSC:
     case NO_APPL_INIT:
          appl_exit();
          break;
                        }
}

/*********************************************************************/
/*               Open virtual workstation                            */
/*********************************************************************/
VOID open_vwork()
{
int i;
        for(i=0;i<10;work_in[i++]=1);
        work_in[10]=2;
        /****What's this, there the same? What the $#$*%& is going
        on here!*/
        handle=phys_handle;
        v_opnvwk(work_in,&handle,work_out);
}



/*********************************************************************/
/*                         Open window                               */
/*********************************************************************/
int  open_window()
{
static char wrongresolution[]="[3][NON-RECOVERABLE ERROR!!!!WRONG
RESOLUTION!MEDIUM OR HIGH ONLY][  TERM  ]";
```

```
/****Inquire as to which resolution we are in, then set the screen
borders to the limits of the screen*/

/****Get the scoop on the desktop window i.e what resolution.*/
rez=Getrez();

/****If were in low resolution display formalert and exit*/
if(rez equals 0){
     form_alert(1,&wrongresolution);
     return(FAILURE);}

/****Shift rez around so we can use it as the divisor for graphics*/
if (rez equals 1)
   rez=2;/****Medium resolution*/
else
   rez=1;/****High Resolution Kinda strange to reverse it.  Well it
         works so don't complain*/

/****Get the scoop on the desktop window 0*/
wind_get(0,WF_WORKXYWH,&minx,&miny,&maxwidth,&maxheight);

/****since wind get returns the maxheight minus a title bar
we must add in this extra height, but first is color or mono*/
if(rez equals 1)
   maxheight=maxheight+19;
else
   maxheight=maxheight+10;



wi_handle=wind_create(WI_KIND,minx,miny,maxwidth,maxheight);
if (wi_handle<0){ /****Notify user no windows are available*/
    return(FAILURE);}

wind_set(wi_handle,WF_NAME,"Whatline",0,0);
graf_growbox(minx+maxwidth/2,miny+maxheight/2,gl_wbox,gl_hbox,minx,miny
,maxwidth,maxheight);
wind_open(wi_handle,minx,miny,maxwidth,maxheight);

graf_mouse(ARROW,0x0L);
hide_mouse();
/****Blank the interior of our application*/
/****But first freeze the window while changes are made*/
wind_update(BEG_UPDATE);

clean_screen();

wind_update(END_UPDATE);
show_mouse();
return(SUCCESS);
}
```

** Professional GEM **
by Tim Oren

Topic: Windows, part II 10/21/85

EXCELSIOR!

In this installment, we continue the exploration of GEM's window manager by finding out how to process the messages received by an application when it has a window defined on the screen.

Also, beginning with this column, sample C code demonstrating the techniques discussed will be available on SIG*ATARI in DL5. This will allow you to download the code without interference by the CIS text-formatter used by ANTIC ONLINE output.

The file for this column is GEMCL2.XMO. All references to non-GEM routines in this column refer to this file. Please note that these files will not contain entire programs. Instead, they consist of small pieces of utility code which you may copy and modify in your own programs.

REDRAWING WINDOWS

One of the most misunderstood parts of GEM is the correct method for drawing within a window. Most requests for redrawing are generated by the GEM system, and arrive as messages (read with evnt_multi) which contain the handle of the window, and the screen rectangle which is "dirty" and needs to be redrawn.

Screen areas may become dirty as a result of windows being closed, sized down, or moved, thus "exposing" an area underneath. The completion of a dialog, or closing of a desk accessory may also free up a screen area which needs to be redrawn. When GEM detects the presence of a dirty rectangle, it checks its list of open windows, and sends the application a redraw message for each of its windows which intersects the dirty area.

CAVEAT EMPTOR

GEM does not "clip" the rectangle which it sends to the application; that is, the rectangle may not lie entirely within the portion of the window which is exposed on the screen. It is the job of the application to determine in what portion of the rectangle it may safely draw. This is done by examining the "rectangle list" associated with the window.

A rectangle list is maintained by GEM for each active window. It contains the portions of the window's interior which are exposed, i.e., topmost, on the screen and within which the app may draw.

Let's consider an example to make this clear. Suppose an app has opened two windows, and there are no desk accessory windows open. The window which is topmost will always have only one rectangle in its list. If the two are separate on the screen, then the second window will also have one rectangle. If they overlap, then the top window will "break" the rectangle of the bottom one. If the overlap is at a corner, two rectangles will be generated for the bottom window. If the overlap is on a side only, then three rectangles are required to cover the exposed portion of the bottom window. Finally, if the first window is entirely within the second, it requires four rectangles in the list to tile the second window.

Try working out a few rectangle examples with pencil and paper to get the feel of it. You will see that the possible combinations with more than two windows are enormous. This, by the way, is the reason that GEM does not send one message for each rectangle on the list: With multiple windows, the number of messages generated would quickly fill up the application's message queue.

Finally, note that every app MUST use this method, even if it only uses a single window, because there may be desk accessories with their own windows in the system at the same time. If you do not use the rectangle lists, you may overwrite an accessory's window.

INTO THE BITS

First, we should note that the message type for a redraw request is WM_REDRAW, which is stored in msg[0], the first location of the message returned by evnt_multi. The window handle is stored in msg[3]. These locations are the same for all of the message types being discuss. The rectangle which needs to be redrawn is stored in msg[4] through msg[7].

Now let's examine the sample redraw code in more detail. The redraw loop is bracketed with mouse off and mouse on calls. If you forget to do this, the mouse pointer will be over-written if it is within the window and the next movement of the mouse will leave a rectangular blotch on the screen as a piece of the "old" screen is incorrectly restored.

The other necessary step is to set the window update flag. This prevents the menu manager from dropping a menu on top of the screen portion being redrawn. You must release this flag at the end of the redraw, or the you will be unable to use any menus afterwards.

The window rectangles are retrieved using a get-first, get-next scheme which will be familiar if you have used the GEM DOS or PC-DOS wildcard file calls. The end of the rectangle list has been reached when both the width and height returned are zero. Since some part of a window might be off-screen (unless you have clamped its position - see below), the retrieved rectangle is intersected with the desktop's area, and then with the screen area for which a redraw was requested. Now you have the particular area of the screen in which it is legal to draw. Unless there is only one window in your application, you will have to test the handle in the redraw request to figure out what to put in the rectangle.

Depending on the app, you may be drawing an AES object tree, or executing VDI calls, or some combination of the two. In the AES case, the computed rectangle is used to specify the bounds of the objc_draw. For VDI work, the rectangle is used to set the clipping area before executing the VDI calls.

A SMALL CONFESSION

At the beginning of this discussion, I deliberately omitted one class of redraws: those initiated by the application itself.

In some cases a part of the screen must be redrawn immediately to give feedback to the user following a keystroke, button, or mouse action. In these cases, the application could call do_redraw directly, without waiting for a message.

The only time you can bypass do_redraw, and draw without walking the rectangle list, is when you can be sure that the target window is on top, and that the figure being drawn is entirely contained within it.

In many cases, however, an application initiated redraw happens because of a computed change, for instance, a spreadsheet update, and its timing is not crucial. In this instance, you may wish to have the app send ITSELF a redraw request.

The main advantage of this approach is that the AES is smart enough to see if there is already a redraw request for the same window in the queue, and, if so, to merge the requests by doing a union of their rectangles. In this fashion, the "blinky" appearance of multiple redraws is avoided, without the need to include logic for merging redraws within the program.

A utility routine for sending the "self-redraw" is included in the down-load for this article.

WINDOW CONTROL REQUESTS

An application is notified by the AES, via the message system, when the user manipulates one of the window control points. Remember that you must have specified each control point when the window was created, or will not receive the associated control message.

The most important thing to understand about window control is that the change which the user requested does not take place until the application forwards it to the AES. While this makes for a little extra work, it gives the program a chance to intervene and validate or modify the request to suit.

A second thing to keep in mind is that not all window updates cause a redraw request to be generated for the window, because the AES attempts to save time with raster moves on the screen.

Now let's look at each window control request in detail. The message code for a window move is WM_MOVED. If you are willing to accept any such request, just do:

```
wind_set(wh, WF_CXYWH, msg[4], msg[5], msg[6], msg[7]);
```

(Remember that wh, the window handle, is always in msg[3]).

The AES will not request a redraw of the window following this call, unless the window is being moved from a location which is partially "off-screen". Instead, it will do a "blit" (raster copy) of the window and its contents to the new location without intervention by the app.

There are two constraints which you may often wish to apply to the user's move request. The first is to force the new location to lie entirely within the desktop, rather than partially off-screen. You can do this with the rc_constrain utility by executing:

```
rc_constrain(&full, &msg[4]);
```

before making the wind_set call. (Full is assumed to contain the desktop dimensions.)

The second common constraint is to "snap" the x-dimension location of the new location to a word boundary. This operation will speed up GEM's "blit" because no shifting or masking will need to be done when moving the window. To perform this operation, use align() before the wind_set call:

```
msg[4] = align(msg[4], 16);
```

The message code for a window size request is WM_SIZED. Again, if you are willing to accept any request, you can just "turn it around" with the same wind_set call as given for WM_MOVED.

Actually, GEM enforces a couple of constraints on sizing. First, the window may not be sized off screen. Second, there is a minimum window size which is dependent on the window components specified when it was created. This prevents features like scroll arrows from being squeezed into oblivion.

The most common application constraint on sizing is to snap the size to horizontal words (as above) and/or vertical character lines. In the latter case, the vertical dimension of the output font is used with align().

Also, be aware that the size message which you receive specifies the EXTERNAL dimensions of the window. To assure an "even" size for the INTERNAL dimensions, you must make a wind_calc call to compute them, use align() on the computed values, back out the corresponding external dimensions with the reverse wind_calc, and then make the wind_set call with this set of values. A window resize will only cause a redraw request for the window if the size is being increased in at least one dimension. This is satisfactory for most applications, but if you must "reshuffle" the window after a size-down, you should send yourself a redraw (as described above) after you make the wind_set call. This will guarantee that the display is updated correctly. Also note that the sizing or movement of one window may cause redraw requests to be generated for other windows which are uncovered by the change.

The window full request, with code WM_FULLED, is actually a toggle. If the window is already at its full size (as specified in the wind_create), then this is a request to shrink to its previous size. If the window is currently small, then the request is to grow to full size.

Since the AES records the current, previous, and maximum window size, you can use wind_get calls to determine which situation pertains. The hndl_full utility in the down-load (modified from Doodle), shows how to do this.

The "zoom box" effects when changing size are optional, and can be removed to speed things up. Again, if the window's size is decreasing, no redraw is generated, so you must send yourself one if necessary. You should not have to perform any constraint or "snap" operations here, since (presumably) the full and previous sizes have had these checks applied to them already. The WM_CLOSED message is received when the close box is clicked. What action you perform depends on the application. If you want to remove the window, use wind_close as described in the last column. In many applications, however, the close message may indicate that a file is to be saved, or a directory or editing level is to be closed. In these cases, the message is used to trigger this action before or instead of the wind_close. (Folders on the Desktop are an example of this situation.)

The WM_TOPPED message indicates that the AES wants to bring the indicated window to the "top" and make it active. This happens if the user clicks within a window which is not on top, or if the currently topped window is closed by its application or desk accessory. Normally, the application should respond to this message with:

```
wind_set(wh, WF_TOP, 0, 0);
```

and allow the process to complete. In a few instances, a window may be used in an output only mode, such as a status display, with at least one other window present for input. In this case, a WM_TOPPED message for the status window may be ignored. In all other cases, you must handle the WM_TOPPED message even if your application has only one window: Invocation of a desk accessory could always place another window on top. If you fail to do so, subsequent redraws for your window may not be processed correctly.

WINDOW SLIDER MESSAGES

If you specify all of the slider bar parts for your window, you may receive up to five different message types for each of the two sets of sliders. To simplify things a little, I will discuss everything in terms of the vertical (right hand side) sliders. If you are also using the horizontal sliders, the same techniques will work, just use the alternate mnemonics. The WM_VSLID message indicates that the user has dragged the slider bar within its box, indicating a new relative position within the document. Along with the window handle, this message includes the relative position between 1 and 1000 in msg[4]. Recall from last column's discussion that this interval corresponds to the "freedom of movement" of the slider. If you want to accept the user's request, just make the call:

```
wind_set(wh, WF_VSLIDE, msg[4], 0, 0, 0);
```

(Corresponding horizontal mnemonics are WM_HSLID and WF_HSLIDE).

Note that this wind_set call will not cause a redraw message to be sent. You must update the display to reflect the new scrolled position, either by executing a redraw directly, or by sending yourself a message.

If the document within the window has some structure, you may not wish to accept all slider positions. Instead you may want to force the scroll position to the nearest text line (for instance). Using terms defined in the last column, you may convert the slider position to "document units" with:

```
top_wind = msg[4] * (total_doc - seen_doc) / 1000 + top_doc
```

(This will probably require 32-bit arithmetic).

After rounding off or otherwise modifying the request, convert it back to slider units and make the WF_VSLIDE request.

The other four slider requests all share one message code: WM_ARROWED. They are distinguished by sub-codes stored in msg[4]: WA_UPPAGE, WA_DNPAGE, WA_UPLINE, and WA_DNLINE. These are produced by clicking above and below the slider, and on the up and down arrows, respectively. (I have no idea why sub-codes were used in this one instance.) The corresponding horizontal slider codes are: WA_LFPAGE, WA_RTPAGE, WA_LFLINE, and WA_RTLINE.

What interpretation you give to these requests will depend on the application. In the most common instance, text documents, the customary method is to change the top of window position (top_wind) by one line for a WA_UPLINE or WA_DNLINE, and by seen_doc (the number of lines in the window) for a WA_UPPAGE or WA_DNPAGE.

After making the change, compute a new slider position, and make the wind_set call as given above. If the document's length is not an even multiple of "lines" or "pages" you will have to be careful that incrementing or decrementing top_wind does not exceed its range of freedom: top_doc to (top_doc + total_doc - seen_doc).

If you have such an odd size document, you will also have to make a decision on whether to violate the line positioning rule so that the slider may be put at its bottom-most position, or to follow the rule but make it impossible to get the slider to the extreme of its range.

A COMMON BUG

It is easy to forget that user clicks are not the only things that affect slider position. If the window size changes as a result of a WM_SIZED or WM_FULLED message, the app must also update its sliders (if they are present). This is a good reason to keep the top of window information in "document units".

You can just redo the position calculation with the new "seen_doc" value, and call wind_set. Also remember that changing the size of the underlying document (adding or deleting a bottom line, for instance) must also cause the sliders

to be adjusted.

DEPT. OF DIRTY TRICKS

There are two remaining window calls which are useful to advanced programmers. They require techniques which I have not yet discussed, so you may need to file them for future reference. The AES maintains a quarter-screen sized buffer which is used to save the area under alerts and menu drop-downs. It is occasionally useful for the application to gain access to this buffer for its own use in saving screen areas with raster copies. To do so, use:

```
wind_get(0, WF_SCREEN, &loaddr, &hiaddr, &lolen, &hilen);
```

Hiaddr and loaddr are the top and bottom 16-bits (respectively) of the 32-bit address of the buffer. Hilen and lolen are the two halves of its length.

Due to a preculiarity of the binding you have to reassemble these pieces before using them. (The actual value of WF_SCREEN is 17; this does not appear in some versions of the GEMDEFS.H file.)

If you use this buffer, you MUST prevent menus from dropping down by using either the BEG_UPDATE or BEG_MCTRL wind_update calls. Failure to do so will result in your data being destroyed. Remember to use the matching wind_update: END_UPDATE or END_MCTRL, when you are done. The other useful call enables you to replace the system's desktop definition with a resource of your choosing. The call:

```
wind_set(0, WF_NEWDESK, tree, 0, 0);
```

where tree is the 32-bit address of the object tree, will cause the AES to draw your definition instead of the usual gray or green background. Not only that, it will continue to redraw this tree with no intervention on your part.

Obviously, the new definition must be carefully built to fit the desktop area exactly or garbage will be left around the edges. For the truly sophisticated, a user-defined object could be used in this tree, with the result that your application's code would be entered from the AES whenever the desktop was redrawn. This would allow you to put VDI pictures or complex images onto the desktop background.

A SIN OF OMISSION

In the last column, I neglected to mention that strings whose addresses are passed in the WF_NAME and WF_INFO wind_set calls must be allocated in a static data area. Since the AES remembers the addresses (not the characters), a disaster may result if the storage has been reused when the window manager next attempts to draw the window title area.

COMING SOON...

This concludes our tour of GEM's basic window management techniques. There have been some unavoidable glimpses of paths not yet taken (forward references), but we will return in time.

On our next excursion, we will take a look at techniques for handling simple dialog boxes, and start exploring the mysteries of resources and object trees.

>>>>> Sample Redraw Code <<<<<

```
  VOID
do_redraw(wh, area)     /* wh = window handle from msg[3] */
  WORD  wh;     /* area = pointer to redraw rect- */
  GRECT  *area;     /*   tangle in msg[4] thru msg[7] */
  {
  GRECT  box;

  graf_mouse(M_OFF, 0x0L);
  wind_update(BEG_UPDATE);

  wind_get(wh, WF_FIRSTXYWH, &box.g_x, &box.g_y, &box.g_w, &box.g_h);
  while ( box.g_w && box.g_h )
    {
    if (rc_intersect(full, &box))     /* Full is entire screen */
    if (rc_intersect(area, &box))
      {
      if (wh == w1_handle)     /* Test for window 1 handle */
        {       /* AES redraw example         */
        objc_draw(w1_tree, ROOT, MAX_DEPTH, box.g_x,
          box.g_y, box.g_w, box.g_h);
        }
      else if (wh == w2_handle) /* Test for window 2 handle */
        {       /* VDI redraw example         */
        set_clip(TRUE, &box);
        /*  Put VDI drawing calls here */
        }
      /* add more windows here */
      }
    wind_get(wh, WF_NEXTXYWH, &box.g_x, &box.g_y, &box.g_w,
      &box.g_h);
    }

  wind_update(END_UPDATE);
  graf_mouse(M_ON, 0x0L);
  }
```

>>>>> Utilities used in do_redraw <<<<<

```
  VOID
set_clip(clip_flag, area)  /* set clip to specified area  */
  WORD  clip_flag;
  GRECT  *area;
  {
  WORD  pxy[4];

  grect_to_array(area, pxy);
  vs_clip(vdi_handle, clip_flag, pxy);
  }

  VOID
grect_to_array(area, array)  /* convert x,y,w,h to upr lt x,y and  */
  GRECT  *area;    /*          lwr rt x,y  */
  WORD  *array;
  {
  *array++ = area->g_x;
  *array++ = area->g_y;
  *array++ = area->g_x + area->g_w - 1;
  *array = area->g_y + area->g_h - 1;
  }

  WORD
rc_intersect(p1, p2)    /* compute intersect of two rectangles  */
  GRECT  *p1, *p2;
  {
  WORD  tx, ty, tw, th;

  tw = min(p2->g_x + p2->g_w, p1->g_x + p1->g_w);
  th = min(p2->g_y + p2->g_h, p1->g_y + p1->g_h);
  tx = max(p2->g_x, p1->g_x);
  ty = max(p2->g_y, p1->g_y);
  p2->g_x = tx;
  p2->g_y = ty;
  p2->g_w = tw - tx;
  p2->g_h = th - ty;
  return( (tw > tx) && (th > ty) );
  }
```

>>>>> "Self-redraw" Utility <<<<<

```
  VOID
send_redraw(wh, p)
  WORD  wh;
  GRECT  *p;
  {
  WORD  msg[8];

  msg[0] = WM_REDRAW;     /* Defined in GEMBIND.H       */
  msg[1] = gl_apid;     /* As returned by appl_init */
  msg[2] = 0;
  msg[3] = wh;       /* Handle of window to redraw */
  msg[4] = p->g_x;
  msg[5] = p->g_y;
  msg[6] = p->g_w;
  msg[7] = p->g_h;
  appl_write(gl_apid, 16, &msg);  /* Use ADDR(msg) for portability */
  }
```

>>>>> Utilities for Window Requests <<<<<

```
  VOID
rc_constrain(pc, pt)
  GRECT    *pc;
  GRECT    *pt;
  {
  if (pt->g_x < pc->g_x)
    pt->g_x = pc->g_x;
  if (pt->g_y < pc->g_y)
    pt->g_y = pc->g_y;
  if ((pt->g_x + pt->g_w) > (pc->g_x + pc->g_w))
    pt->g_x = (pc->g_x + pc->g_w) - pt->g_w;
  if ((pt->g_y + pt->g_h) > (pc->g_y + pc->g_h))
    pt->g_y = (pc->g_y + pc->g_h) - pt->g_h;
  }

  WORD
align(x,n)     /* Snap position x to an n-bit grid         */
  WORD   x, n;   /* Use n = 16 for horizontal word alignment */
  {
  x += (n >> 2) - 1;     /* Round and... */
  x = n * (x / n);     /* remove residue */
  return (x);
  }
```

>>>>> Window full utility <<<<<

```
  VOID
hndl_full(wh)    /* depending on current window state, make window    */
  WORD  wh;  /*   full size -or- return to previous shrunken size */
  {    /* graf_ calls are optional special effects.       */
  GRECT  prev;
  GRECT  curr;
  GRECT  full;

  wind_get(wh, WF_CXYWH, &curr.g_x, &curr.g_y, &curr.g_w, &curr.g_h);
  wind_get(wh, WF_PXYWH, &prev.g_x, &prev.g_y, &prev.g_w, &prev.g_h);
  wind_get(wh, WF_FXYWH, &full.g_x, &full.g_y, &full.g_w, &full.g_h);
  if ( rc_equal(&curr, &full) )
    {    /* Is full, change to previous     */
    graf_shrinkbox(prev.g_x, prev.g_y, prev.g_w, prev.g_h,
      full.g_x, full.g_y, full.g_w, full.g_h);
    wind_set(wh, WF_CXYWH, prev.g_x, prev.g_y, prev.g_w, prev.g_h);
        /* put send_redraw here if you need it */
    }
  else
    {    /* is not full, so set to full    */
    graf_growbox(curr.g_x, curr.g_y, curr.g_w, curr.g_h,
      full.g_x, full.g_y, full.g_w, full.g_h);
    wind_set(wh, WF_CXYWH, full.g_x, full.g_y, full.g_w, full.g_h);
    }
  }

  WORD
rc_equal(p1, p2)    /* tests for two rectangles equal  */
  GRECT  *p1, *p2;
  {
  if ((p1->g_x != p2->g_x) ||
      (p1->g_y != p2->g_y) ||
      (p1->g_w != p2->g_w) ||
      (p1->g_h != p2->g_h))
    return(FALSE);
  return(TRUE);
  }
```

J-BUG Software Exchange Library

From the Boston Computer Society's Atari ST User Group

About The J-BUG library:

This library is made up of public domain and shareware programs. Some are programs that are often very useful but could not be marketed economically. The authors release them into the public domain for use without charge. Other programs, generally called "shareware", are often as good as or even better than their commercial counterparts. The authors let you try the program for free, but if you like it and continue to use it they ask that you send the author payment for the program, ususally $5 to $20. If you do use such a program, please DO send the money, it helps support development of more programs of this type.

This is a list of the latest additions to our library which is updated monthly. It is also posted on our electronic bulletin board at (617)396-4607.

Note: Programs are tested before they are added to the library but no guaranties can be made pertaining to their performance or content.

Program contributions to this library are encouraged. Donors to the library will receive a free disk of their choice in return for the donated disk.

DISK PRICES: $6.00 each for BCS members
$10.00 each for non-members
$3.00 exchange for blank disk (at J-BUG meeting)

Please make checks payable to the Boston Computer Society. Prices include shipping for mail orders.

Anyone wanting to purchase disks or donate programs can contact the librarian.

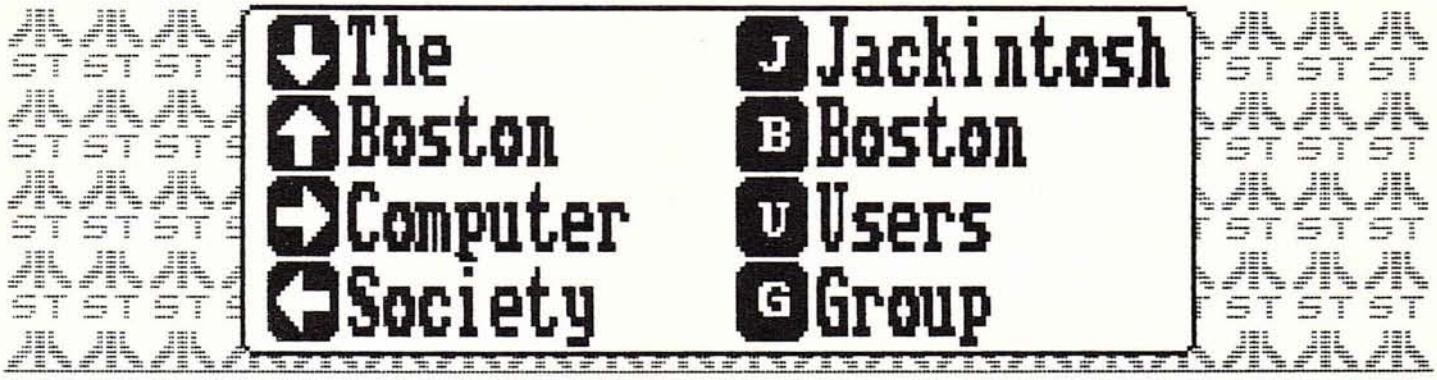
David Sheibley
530 Walnut Street
Bridgewater, MA 02324
(617)697-2723 (evenings)

CIS# 74176,252
DELPHI ID: CANNONBALL
GENIE ID: DSHEIBLEY
BIX ID: DSHEIBLEY

The three characters after the period in a filename define the type of file as explained below.

Type	Explanation
ACC	Desk accessory
BAS	Program source file written in BASIC
BIN	Binary file
C	Program source file written in C
DAT	Data file, usually generated or needed by an associated program
DOC	Documentation/instructions (can be read from desktop)
INF	Information/data file, used to store user's default preferences
LOG	Program source file written in LOGO
NEO	Picture data file for NEOCHROME
O	Object file ready for linking
PAS	Program source file written in PASCAL
PIC	Picture data file
PI1	Low-res DEGAS picture file
PI2	Medium-res DEGAS picture file
PI3	Hi-res (monochrome) DEGAS picture file
PRG	Program
RSC	Resource file needed by an associated program
S	Program source file written in assembly language
SNG	Song data file
TTP	Requires user to input parameters before running
TXT	Text file

Created with Publishing Partner and an Apple Laserwriter Plus



1a:Desk Accessories Over two dozen desk accessories including calculators, ramdisks, clocks, calendars, games and more.
2a:BASIC Programs Programs written in ST BASIC including games, graphics demos and utilities.
3a:C Programs Sample "C" programs. APSKEL, BICALC, DCOS, DROP2, FRACTALS, NEOCON, PIECHART and more.
3b:C Programs Dhryston benchmark, Tim Oren's Professional GEM classes
4a:Color Slide Show AFTERBURN, ANGEL, BRUNETTE, CHAOS, CHEVAL, CHROME, DETECTVE, FRACTAL, GREATWAV, HOUSE, JOCKEY, MAP34, MAP431, NCC1701, ROBOTTV, SAILBORD, SHUTTLE, STLOG, WATRFALL, WORM.
4b:Color Slide Show ATARI, CHARLIEB, CINER4, FAUCET, FLAG, GALACTIC, GARFIELD, GIRLS, GRAPH, HARLEY, HEMAN1 - HEMAN6, INSECT, JOHNNY, OUIJA1, OUIJA2, REPORT, SANTA, SNAKE, SNOOPY, SOLAR, SPACE2, SURFER, TRAIN, TRUMPET, VACATION, WHEELS.
4c:Color Slide Show BEE, COMET, COMMIE, COVER36, DESERT, DIRE, EXPRESS, MAN2 - MAN6, MONALISA, PARTS, PLANET, ROBOT, SATURN, SPCGHST, SUPRMAN, TROUBLE, YAMATO.
4d:Color Slide Show ALOHA, BOAT, BUGS, BULLY, CHATTER, COYOTE, DAFFY, DAVROS, DRAGON, EARTH, K9, MARIEL, MOON, MOTHER, NOTES, PLANETS, ST, STARTREK, SWORD, URANUS, WALL.
4e:DEGAS and NEO Utilities Degas printer drivers, Degas fonts, special effects slide shows, picture format changers.
5a:DEMOS 3-D Chess demo, Habacheck, Infocom sampler, PC Intercom
5b:DEMOS RTX demo, Star Raiders, Sundog
5c:DEMOS H+D Base demo
5d:DEMOS 4xForth demo
5e:DEMOS Antic's Cartographer demo
5f:DEMOS ZOOMRACKS demo disk. Complete working copy limited to 20 records. Can read and manipulate Zoomracks files of any size.
5g:DEMOS Atari ST demo produced by Audio Lite. Highlights the features of the ST with music and graphics.
6a:Games Blackjack, Celestial Ceasars, Eliza, Life, Maze, Megaroids, Mylife, Ripcord, Score4, STBattle, Sundog hints, Target, Twogame, yog
6b:Games PuzzlePuzzle: High quality shareware game from Germany. Monochrome only.
6c:Games Adventure programming language and interpreter from David Betz. Includes commercial quality shareware adventure; Starship Columbus.
6d:Hack 1.03 Graphics oriented Dungeons and Dragons type game.
7a:Graphics Over 35 graphics demos.
7b:Graphics Neochrome with docs, flying bird demo and more.
7c:Graphics AudioLite's Christmas demo with music.
7d:Graphics FujiBoink!, CAD 3-D files, special effects slide shows and more.
8a:Language A68 assembler, Tiny BASIC Interpreter, STARTREK.TBI
8b:Language FORTH-83
8c:Language X-LISP by David Betz
9a:LOGO LOGO programs
10a:Misc. J-BUG Newsletter Volume 1, Number 1. (Ascii Format)
10b:Misc. J-BUG Newsletter Volume 1, Number 1. (STWriter Format)
11a:Monochrome Pictures BUGS, FOURSUM, GEOLAN, GREETING, GRID, GRID1, GRID2, JACK
12a:Music MIDI demos, Casio patch librarian programs, Music Studio songs
12b:Music Deluxe Piano, other sound demos
13a:Pascal Sample Pascal programs including OSS demo files
14a:Telecommunications STTalk, Kermit, XMoterm and more
15a:Utilities Set clock, disk copier, Dvorak keyboard, rename icons, label maker, mem check, directory printer, file squeezer and more.
15b:Utilities Command processor, clock, MicroEmacs, Disk Indexer, Reasonable Disk Copier, print spooler and more.
15c:Utilities Directory search program, Covalent Bond sketcher, reset proof ramdisks, disk masher and more.
16a:Word Processors STWriter version 1.07, 1ST Word printer drivers.

Disk #30
ASHUTTER.PRG - Nice special effects slide show. Works with Degas or Neo pictures.
ELIZA.TOS - ST version of the classic "Artificial Intelligence" program
FUJIBOIN.PRG - Graphics demo from Xanth
KERMIT.PRG - Kermit communications program.
IBMTTY.ACC - Used with Kermit when communicating with IBM computers
MINOS.ACC - 3-D maze desk accessory
SANTAPAR.BAS - 1 to 6 player Basic game: build your state into a kingdom
TINYSTUF.PRG - Compresses Degas and Neo pictures
TINYVIEW.PRG - Slide program for compressed pictures
ALPHOM.3D - CAD 3D object file
CONICS.3D - " "
TABLE.3D - " "

Disk #31 - August '86
Adventure Construction Set: A specialized programming language for writing and playing text adventures by David Betz.
ADVCOM.TTP - Adventure compiler
ADVINT.TTP - Adventure interpreter
SAMPLE.ADV - Sample adventure
COLUMBUS.DAT - Starship Columbus: a high-quality shareware adventure for use with the above.
ACC_LOAD.PRG - Allows you to keep all of your desk accessories on one disk and choose which ones to load upon booting up. Place in an AUTO folder.
EZSQUEEZ.PRG - GEM-based utility for compressing files.
FORMAT+ - Formats disks that read and write much faster than normal. See September '86 Analog.
MASH.TTP - Compresses a single file or an entire disk into a single smaller file.
RMDSK174.PRG - Reset-proof 174K ramdisk. Place in an AUTO folder on boot disk.
RMDSK500.PRG - As above, 500K ramdisk for 1-meg machines
WORD400.ACC-Desk accessory text editor with 400 line capacity.

Disk #32 - August '86
AUTO.PRG - Cellular Automations: graphics demo by Alan Page.
DISKTOP.PRG - Disk indexing utility
LEWIS123.PRG - Covalent bond sketching program by Stephen Mahalek. Monochrome.
STWRITER - Version 1.07 of the original word proccessor from Atari. Many bugs are fixed and enhancements are added. Includes manual and all related files.

Disk #33 - August '86
HACK103.TTP - HACK version 1.03 ported from the MS-DOS version. A display oriented Dungeon and Dragons type game. Similar to ROGUE playedon UNIX systems.

Disk #34 - September '86
CAD-3D Files - F14.3D, HOLLOW.3D, PHBODY.3D, PHONE.3D, ST.3D, YZ.3D
FORTUNEC.ACC - Fortune cookie desk accessory
JULIA3.PRG - GEM based fractal drawing program
MSCNVRT.PRG - Converts Music Studio files for the Amiga to ST files
MUSIC STUDIO SONGS - Close Encounters, Flashdance, Ghostbusters, Grand Old Flag, etc.
ORCHPLAY.PRG - Demo of new music program with six sample songs. Monitor and MIDI sound output.
STSPLITR.PRG - Splits a large program into two pieces which can later be rejoined
YAHTZEE.PRG - Color yahtzee game

Disk #35 - September '86
BIORYTHM.BAS - Plots your biorhythm
COKECAN.BAS - Draws a Coca-Cola can
LOANCALC.BAS - Figures loan payments
MAGIC.BAS - Performs a 'magic' card trick
BIO.NAT - Plots biorhythms with VIP Professional
CURSOR.PAS - How to control cursor location in Personal Pascal
DBMAN Review and tutorial
DUMP2GEM.PRG - Dumps a high-res Degas screen to a Gemini printer. With source code.
DXLIST.TTP - Disk index lister from Analog magazine
EMACS.DOC - Quick reference card for micro-emacs. Print directly from desktop.
INTRAM.ACC - Variable size ramdisk. New version.
LIBRARY.TOS - Joins many files into one large file that can be expanded back later.
MEMCHECK.PRG - Displays available memory. With source code.
MONITOR.TXT - Instructions to enlarge the display on the SM124 mono monitor.
PRINTEP.PRG - Allows you to change the configuration of an Epson printer.
SOLAPACK DEMO - Ramdisk and printer spooler demo program.
SUPBOX.TOS - Color graphics demo.
ULTICOPY.PRG - Automatically copies files from disk to ramdisk upon bootup.

Disk #36 - September '86
MARBLES.PRG - Fantastic graphics demo of ball bouncing on a mirror with multiple light sources and reflections.
PICTURES - CRATE, EQUINOX, FGORDON, JET, KOLBOINK, NEWAFF, PORSCHE, RDRACE2, SETFINAL, STLOG36, WBCNFIRE
STARFIRE.PRG - Color graphics demo
TBNEWS.TXT - Time Bandit newsletter from Michtron.

Disk #37 - September '86
TECHMATE CHESS DEMO - Working chess demo. (easy to beat)
FRACTAL.PRG - Fast fractal program by Allen Chan.
NEOFUN.PRG - Special effects slide show for Neochrome pics.
PROFF.PRG - Powerful text formatting utility for screen display and printing.

Disk #38 - October '86
ARC.TTP - File archive program compatible with IBM and Amiga versions. Compresses many files into one small file.
ARCSHELL.PRG - Runs with ARC.TTP for an easy to use Gem interface. With Modula-2 source code.
HILBERT.BAS - Plots Hilbert curves.
MAKEICON.PRG - Converts desktop file cabinet icons to 3.5 inch disk icons.
PROCALC.ACC - Scientific calculator desk accessory.
SAMPLER2.BAS - VDI sampler from Analog Magazine.
C-Manship - Programs and listings from Analog Magazine.

Disk #39 - October '86
CALCULAT.LOG - LOGO calculator.
COLCAVE.TOS - Colossal Caves: the original Adventure. Exact duplicate of the original text adventure.
DESIGNS.LOG - LOGO graphics program.
DESKMAN.ACC - Shareware from Michtron. Makes DOS commands available from within a GEM program.
DIGICLOC.ACC - Digital clock accessory.
DRAGON.PRG - Get to the other side of a hidden maze before the dragon gets you!
KINGSV2.BAS - Multiple player (1-6) game. 1400's Italian land baron simulation.
NIGHT.PRG - Very similar to WORMS, a game in which you program your night crawler to cover more of the board than the others.
NOTEPAD.ACC - Small notepad accessory.
PCOMP.PRG - Sets Epson compatible printers to compressed mode. With assembly source code.
SOLIDSTA.BAS - New version of Solid States from Analog Magazine. With 8 data files.
WRDCOUNT.ACC - Counts the number of words in any text file.

Disk #40 - October '86
EMACSNEW.TTP - New version of Micro-Emacs.
PAYSCHED.PRG - Figures loan payments.
POOLMONO.PRG - Monochrome billiards game.
STWRITER Version 1.50 - The newest version of STWriter. Enhancements include: Page width can be up to 198 columns. Page length up to 112 lines.Conditional page eject is added. Resets printer every time a document is printed. Typeover and insert mode are now available. All ST characters are available. Includes printer drivers for Epson, Gemini, NEC, and Panasonic printers.

Disk #41 - November '86
ALERT.BAS - How to create alert boxes in ST Basic.
STOCKS.BAS - Tracks performance of stocks. From Analog.
DALEKS.PRG - Arcade-Strategy game for color or mono.
FONTCONV.PRG - Converts Degas fonts to GDOS Degas Elite fonts.
TINYLOAD.ACC - Loads compressed TINY format pictures into Degas Elite.
OGRE.TOS - Stategy game patterned after the board game of the same name. Mono or color.
SPHERES.PRG - Graphics demo with Pascal source code.
ENHANCE.PRG - Manipulate monochrome pictures in a variety of ways.
STSPEECH.TOS - A speech synthesizer that will pronounce whatever words are typed in.
CZ-Android Demo - 32 patches for Casio synthesizers created by Hybrid Arts' CZ-Android program.
F15.PC1 - Degas Elite picture by Tom Hudson.
MONUMENT.PC1 - Degas Elite picture by Tom Hudson.
SHOWPIC2.PRG - Slide program for Degas Elite pictures.

Disk #42 - November '86
1STPRINT.DOC - Instructions for creating a 1ST Word printer driver.
JUKI.HEX - 1ST Word printer driver for Juki printers.
FLASH.HNT - Hints on using the Flash terminal program.
FORMAT.PRG - Formats disks using up to 82 tracks.
MACMENU.PRG - Won't allow pointer into menu bar unless right button is pressed. Put in AUTO folder.
MEMTEST.PRG - Memory tester from Supra Corp.
QFORMAT.PRG - Formats disks for faster reading and writing.
SCAN.TOS - Returns the ASCII codes for every key pressed. With assembly source code.
SPELL.PRG - Spelling check program with Pascal source code.
UNITERM.PRG - VT102 and Tektronics 4014 terminal emulator.

Disk #43 - November '86
DSHELL.TOS - Gives a complete directory from within a command line interpreter or from the desktop.
EMACS37I.TOS - A version of Micro-Emacs with mouse cursor control and on-line help.
UEMACS.TOS - Another version of Micro-Emacs modified by Russ Wetmore.
MIDIDEMO.PRG - Demo of MidiPlay music software. Plays through speaker or MIDI synthesizer.
NEWWORD.ACC - Desk accessory mini-word processor.

Disk #44 - November '86
Atari CP/M Emulator - Runs almost all CP/M 2.2 programs. With full documentation.
ALIENS.COM - CP/M Space Invaders type game.

Disk #45 - November '86
CHECKBOOK - Complete checkbook maintenance template for VIP Professional spreadsheet. Versions for 520 and 1040 ST's. With complete documentation.
ULTRACALC Demo - Demo of Stone Age Software's very sophisticated scientific calculator, color or mono.

Disk #46 - November '86
BACKUP.TTP - Hard disk backup program.
CLIPBOARD - Global clipboard facility for passing data between programs. Authorized and recommended by Atari, written by Russ Wetmore. With full source code and documentation.
FUNKPLOT.PRG - Plots the curve of an equation. From Germany.
MEMTEST1.PRG - Tests RAM chips for defects.
MONITOR.TOS - Powerful monitor program for the ST.
MUSIC - 24 songs for the Music Studio.
PAGE.PRG - Outputs a file to the printer in paginated form. With Pascal source code.
SETTIME.PRG - Sets the system clock. With Pascal source.
STGRAFIC.TOS - Monochrome graphics demo with dozens of different screens.
TBUG.PRG - Humorous program that puts a "bug" on your screen. Monochrome only.

Disk #47 - December '86
Shiny Bubbles - Awesome color demo by Xanth. Four mirrored bubbles move in an eggbeater pattern while Atari logos scroll underneath.

Disk #48 - December '86
FSEL.BAS - How to use files selectors in ST Basic.
GRAPH.BAS - Draws a multi-colored cone.
LABELPRT.BAS - Prints address labels.
DEGASPRT - Installs a Degas printer driver as the system driver upon bootup so that ALT-HELP will produce a screen dump.
FORMATER.PRG - Formats disks.
FORMAT2.PRG - Formats disks in almost every possible way.
LQ800.PRT - Degas printer driver for the Epson LQ-800.
MIKYTERM.TOS - VT-52 terminal program with ASCII and X-Modem file transfers and 20 number autodial directory.
PRO-ED.TTP - Demo version of a new text editor for programmers. Demo is limited to 5K files.
SPEECH.PRG - Animated talking head. Runs on color systems only. With Modula-2 source code.
CITY.3D - CAD-3D data file of a cityscape.
FOURPIEC.3D - CAD-3D data file of four chess pieces.
SYSTEM.3D - CAD-3D data file of the solar system.
FUJI.SYM - Atari symbol for The Graphic Artist.

Disk #49 - December '86
CADENZ.PRG - Checkers game with Pascal source code.
Flight Simulator 2 Scenarios - A collection of challenging and scenic scenarios for Sublogic's Flight Simulator program.
LIFE.PRG - Another version of the classic game with C source code. From Analog Magazine.
MONODEMO.PRG - Graphics demo for monochrome monitors.
ORIONS.PRG - Demo of a scrolling space combat game.
QUIX.PRG - Monochrome graphics demo.
RALLY.PRG - Program to score automobile rallies.
STRING.PRG - Monochrome graphics demo.
UPSIDE.ACC - Desk accessory that turns the desktop upside-down.

Disk #50 - December '86
China Dolls - Animated spinning dolls, one-meg color systems only.

Disk #51 - January '87
DRFLOPPY - Disk sector editor from Analog magazine.
FONTTRIX - Loads DEGAS or 8-bit fonts to replace the system font. From Analog magazine.
PMMASTER - Public-domain PrintMaster art galleries. Includes program to convert Print Shop graphics to PrintMaster format.

Disk #52 - January '87
CADENZA - Checkers game. Both PRG and ACC versions.
FRACTAL11.PRG - Fractal program in which you can specify how much resolution you want - runs faster with larger pixels.
LITTLSEA - Ageis Animator display, animated undersea scene.
MULTIMUSIC - Nine songs that will play in the background while another application is running.
TREK2.BAS - Basic Star Trek game.
HENON.PRG - Graphics program that draws Henon maps.

Disk #53 - January '87
GEM4ARC - GEM shell program for ARC file compression program. Includes Pascal source code.
INTRAM.ACC - Version 4.0 of a popular ram-disk program.
LOANCALC.PRG - Compiled Basic program that figures loan payments, with Basic source code.
STWRITER Version 1.70 - Latest version of ST Writer word processor. Includes page wait on print preview, other enhancements and corrections.
UNDELETE.PRG - Recovers files accidently deleted.
STOCKS.BAS - Revised version of stock tracking program from Analog magazine.

Disk #54 - January '87
CB.TOS - Reformats C source files for proper indenting of loops and control structures.
CURSDEMO.TOS - Personal Pascal demo explaining cursor movement and screen display options.
DESKTOP.DOC - Everything you ever wanted to know about the DESKTOP.INF file.
DISASMBL.TOS - Disassembler
FAX.ACC - Dumps ASCII characters from a GEM screen. From Analog magazine.
PICLOAD.BAS - How to load pictures into Basic programs. From Analog magazine.
SCRNSAVE.PRG - Turns off screen output after a predetermined amount of time to prevent burn-in. With Pascal source.
SLIDERS.PRG - Tom Hudson tutorial on using sliders in dialog boxes. With C source code. From ST-Log.
STRIP.TTP - Strips carriage returns, line feeds, and control characters from a file. With C source code.
WINDOWS.BAS - Tutorial on using windows in ST Basic. From ST-Log magazine.

Disk #55 - January '87
DEGASDISP.PRG - Displays any resolution DEGAS picture in any other resolution.
LABELS.PRG - Label maker program with Pascal source code.
NEWWORD.ACC - Version 4 of word processor desk accessory.
X10DEMO.TOS - Allows you to program an X-10 home control system from the ST.
YARD.PRG - "Yet Another Ram-Disk" reset-proof ramdisk. Configurable to any size.
WINDOW.PRG - Breakout-style game written in Personal Pascal.

Disk #56 - February '87
1STASCII.PRG - Converts 1ST Word files to readable ASCII files.
DCOPY17.TOS - Menu-driven utility that performs many DOS funtions.
HDX.PRG - Atari hard disk utility dated 9/86. Previous versions had serious bugs that corrupted data on the hard disk.
KALKLOCK - Nice clock and calendar program. Includes both program and desk accessory versions.
LESS.TTP - Reads text files allowing both forward and backwards movement in the file.
LOADRAM.PRG - Automatically copies files into a ramdisk upon boot-up. Includes Pascal source code.
MEGABLIT.PRG - Monochrome drawing program.
PCOMMAND.PRG - Very complete command line interpreter.
RDSKDARC.PRG - Automatically extracts ARC files and copies them into a ramdisk upon boot-up. Includes Modula-2 source code.
VOLUME.PRG - Adds or changes the volume name of a disk.

Disk #57 - February '87
ATARTREK.TOS - Star Trek type game for color or mono systems. With Pascal source code.
LARN.TTP - Dungeons and Dragons type adventure game for color or mono systems.

Disk #58 - February '87
CZPATCH.PRG - Automatic patch generation and archiving program for the Casio CZ-101 synth.
DISKLABL.PRG - Prints disk labels with an Epson-compatible printer.
TRANSP90.PRG - Printer utility for Star and Epson printers that downloads different fonts to the printer.
FOOTBALL.PRG - Color football game.
LIBRARY - Diskette library maintenance program for use with dbMAN database program.
MIDI.PRG - MIDI sequencer for color or monochrome systems.
TINYVIEW.PRG - Version 2.0 of the popular slide show program. Shows title of the picture and allows viewing time to be changed.
MANDELBOX.PRG - Very nice color fractal program. Requires supplied ramdisk to operate.

Disk #59 - February '87
BMODEM.PRG - Telecommunications program by David Betz. Supports ASCII, X-modem and Y-modem file transfers.
UNITERM.PRG - Version 1.6g of the Uniterm telecommunications program with VT-102 and Tektronics 4014 terminal emulation. Supports ASCII, X-modem and Kermit file transfers.

Disk #60 - March '87
BREAKOUT.PRG - Full screen color breakout game.
LE_CUBE.PRG - Spinning cube demo for color systems.
DIALOG.BAS - GFA Basic tutorial on using the resource construction set to create sophisticated dialog boxes.
GFADEMO.BAS - Demo of GFA Basic's capabilities.
GFARO.PRG - GFA Basic run-time module. Will run any GFA Basic program.
MAKEMENU.BAS - Tutorial on creating drop-down menus using GFA Basic.
HAUNTED.PRG - Haunted house arcade game from Paradox.
MONEY.PRG - Color arcade game from Analog magazine.
POKER.PRG - Stud poker game for color sustems.
RESET.PRG - Forces a clean reset without having to turn machine off.
YARP.PRG - RTTY terminal program for ham radio enthusiasts.

Disk #61 - March '87
ALARMCLK.ACC - Desk accessory that displays the time in the upper right corner of the screen. Also includes alarm clock that will alert the user at the specified time. Up to five seperate time/dates may be set.
FONTEDIT.PRG - Screen and printer font editors for Publishing Partner, monochrome only. Includes no documentation.
PPDRIVER - New printer drivers for Publishing Partner, version 1.01. Includes FX-80, MX-80, and Gemini drivers along with new printer fonts that give much better results than the originals.
GEMFED.PRG - GDOS font editor. Creates new fonts for GDOS applications like Easy-Draw and Degas Elite. Includes two new fonts.
TOSHIBA.HEX - 1st Word printer driver for Toshiba printers.
TURTLE.PRG - Hard disk backup utility. Allows full or incremental backups.

Disk #62 - March '87
ETERNAL.PRG - Reset-proof ramdisk configurable to any size. With Pascal source.
MOLLY.PRG - Graphics demo for color or monochrome systems.
MONOPOLY.PRG - Commercial quality color Monopoly game. One player can choose to play with 1 to 3 computer opponents. With GFA Basic source.
ST_AGG.PRG - Color Aggravation game for one to six players.

Disk #63 - March '87
BACKUP.PRG - Hard disk backup utility, backs up only new files and files that have been changed since the last backup was performed.
CITADEL.PRG - Citadel bulletin board system. Requires a double sided drive.

Disk #64 - April '87
GFALOANS.BAS - Computes loan payments and interest earned.
QUICKSORT.BAS - Demonstrates a very fast sorting routine in GFA Basic.
WINDOWS.BAS - Tutorial on windows in GFA Basic.
CAPS.ACC - Indicates when the caps-lock key is activated.
DCOPY19.PRG - Very useful utility that copies and deletes files, formats disks, ARCs and de-ARCs files, and much more.
USAMAP.GEM - Map of the United States for use with Easy-Draw
ICON.PRG - Converts PrintMaster icons into Degas pictures for use in other programs.
ZPRINTQ.PRG - 64K printer buffer.
ROCP.ACC - Read only control panel desk accessory that uses only one slot and much less disk space.
SYSMAP.PRG - Displays system data such as free disk space, free memory, etc.

Disk #65 - April '87
EAMON.PRG - Text adventure game system. Includes GFA Basic source along with compiled program.
GRAIL.PRG - *Monty Python and the Holy Grail* text adventure for use with the EAMON adventure game program.
ZYPHUR.PRG - Another EAMON system text adventure.

Disk 66 - May '87
DEATHSTAR.PRG - *Star Wars* text adventure for use with the EAMON adventure game program.
DISKBAR.PRG - A small flashing bar appears on screen when disk I/O occurs.
DISKEDIT.PRG - Disk editor program.
DISKTOP2.PRG - New enhanced version of the DISKTOP disk directory program.
GFAVECTOR.PRG - Demonstrates the new vector-graphics add-on for GFA Basic.
MOUNTAIN.BAS - Fractal drawing program.
PRIVEYE.ACC - Desk accessory that displays free memory, disk space available, screen resolution, etc.
RVRSSCRN.ACC - Reverses a monochrome screen's colors. Includes program version as well as acc.
STARTUP.ACC - Reads the DESKTOP.INF file on boot-up and sets all options correctly without the control panel. Also includes a screensaver feature.
DIRDUMP.PRG - Dumps a nicely formatted listing of a disk's contents to the printer.
NAGELBIO.PRG - Biorythm program.

Disk #67 - MAY '87
This disk contains four games written by David Addison in GFA Basic. The GFA Run-Only program is included allowing the games to be played without having to own GFA Basic. All four games run on color systems only and are of very high quality.
MILLE BORNES - One player version of the popular French road race card game.
SOLITAIRE - Klondike and Canfield versions. Addictive!
STONEAGE - Similar to *Boulder Dash* arcade game
TUNNEL - Mouse's eye view of a maze you must find your way out of.

Disk #68 - May '87
AUTODESK.PRG - Allows the same disk to boot to a different desktop depending on the type of monitor attached.
DASDRAFT - Replacement fonts for *Dollars and Sense* that allow reports to be printed much faster.
EPSONLQ.HEX - 1ST Word printer driver for Epson LQ series printers.
EPSONLQ.PRT - Degas printer driver for Epson LQ printers.
NECP6.PRT - Degas printer driver for the NEC P6 printer.
EZDRAWFT - Two fonts for use with Easy Draw.
RAMBUFER.ACC - Desk accessory print spooler and Ram disk.
STRTGEM2.PRG - Allows a GEM program to auto-boot from an AUTO folder.
VISICLON.TTP - A *VisiCalc* spreadsheet clone for the ST.

Disk #69 - June '87
CLIPART - Seven screens of high-res clip-art for use with desktop publishing programs or include in your own drawings. Converted from Macintosh format.
COLUMBIA.FNT - Font for Publishing Partner.
HELVETICA.FNT - Improved Helvetica font for use with Publishing Partner.
NEOSNAP.PRG - Ram-resident program that captures almost any screen in Neo-Chrome format. Works in all resolutions.
SCHIZO.ACC - Desk accessory that replaces the control panel while including many more options.
TEMPUS.PRG - Demo version of a very fast GEM based text editor. Mono or color.
WHEEL.PRG - Excellent Wheel of Fortune - type word game written in GFA Basic. Comes with three data files and also includes a data file generator that allows you to make up your own puzzles. Color.

Disk #70 - June '87
FC_DEMO.PRG - Demo version of a new MIDI music sequencer. Includes five sample songs. Color and monochrome versions included.
SPLOTTER.PRG - Plots the curve of an equation.

Disk #71 - June '87
AZARIAN.PRG - Playable demo version of a very smooth space shoot-em-up arcade game, color only.
ESCHER.PRG - Neat graphics program from ST-Log magazine, June '87.
LABELER.PRG - Prints nice disk labels on an Epson- compatible printer.
SUNMOON.PRG - Gives detailed sunrise and sunset times and similar facts for almost every major city in the world.

Disk #72 - July '87
ETUDE.BAS - Etude in C minor from ST-LOG. ST Basic.
MOUSE.BAS - Mouse editor from ST-LOG in ST Basic.
MUSIC.BAS - Introductory music tutorial in ST Basic.
MORTARMAN.BAS - GFA Basic arcade-style game.
COMPDEMO.PRG - Demo of new GFA Basic add-on that creates custom dialog boxes.
GFATERM.BAS - Simple terminal program in GFA.
XREF.BAS - Prints a listing of subroutines in a GFA Basic prog.
SHUTTLE.DWG - Very detailed space shuttle drawing for First-Cadd users.
EZ-DRAW files - USA map, chess board, disk labels, borders, etc.
RGNTFONT.TOS - Substitutes the normal character set for the bogus one used in Regent Word I.
SLOMO.PRG - Slows down operation of the ST to a user-defined rate.
SLOWDOWN.PRG - Does the same as the program above, only better. By our own Mike Newhall.

Disk #73 - July '87
AWARI.PRG - Ancient African strategy game, monochrome only.
CZPATCH.PRG - Casio CZ patch librarian from ST-LOG.
CZPHONIX.PRG - Pre-release version of a sophisticated patch librarian for Casio CZ synthesizers.
DEARC1.PRG - Automatically extracts all ARC files on a disk.
DSLIDE.PRG - Very nice slide program for DEGAS, NEO, and TINY pictures of any resolution.
MEGABOOT.PRG - For two monitor owners - Boots with the correct DESKTOP.INF file depending on which monitor is connected.
SCHIZZ01.ACC - Updated version of desk acc-essory that includes all features of control panel and printer accessories plus more. Now works in both color and mono.
INVINCIBLE.PRG - Makes your character invincible in the game "Time Bandits"
PUZZLE.PRG - Sliding-square type puzzle.

Disk #74 - July '87
GRDEMO - Neat cartoon-style color graphics and sound demo.
NEOCAL.PRG - Prints a calendar for any month using a NeoChrome picture for the header.
WHEEL2.PRG - Excellent Wheel of Fortune game, now with bonus rounds and a game puzzle editor.
LOTTERY.PRG - Picks numbers for Megabucks or Mass millions lottery.

Disk #75 - July '87
CLOCK.ACC - Clock desk accessory from ST-LOG that also reads the control panel and printer set-up configuration.
FONTED - Font editor for Publishing Partner including full docs.
INVEST.CMD - dbMAN command files for tracking an investment portfolio.
PRINT.ACC - Prints a file from within any GEM Program.
RAMDISK - 128, 192, 512 and 999K ramdisks from Atari Corp. Not reset-proof, but guaranteed to work with future ROM upgrades.
ROCPO8.ACC - Read-only control panel. Saves valuable disk and memory space.
SYNFCONV.PRG - Converts Synfile files to dbMAN format.

ATARIFEST'87

AT

Fairfax High School

October 24th, 10:00am - 5:00pm
October 25th, NOON - 5:00pm

Preparations for ATARIFEST '87 are steadily shaping up! Committees are being formed, arrangements being made ... dedicated "Atarians" throughout the area are working together to make this year's expo a truly memorable one!! If you have any special questions, here are the people to call or write:

Vendors and/or exhibitors cantact:

Mr. Palmer Pyle
Vendor Coordinator
709 S. Concord Court
Sterling, VA 22170
(703) 437-3883

User Group queries:

Ms. Georgia Weatherhead
User Group Coordinator
3130 Cedar Grove Drive
Fairfax, VA 22031
(703) 938-4829

Any others:

Mr. Randy A. Ingalsbe
Information Coordinator
7414 Gary Street
Springfield, VA 22150
(703) 644-0159

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- ☐ J-Bug for Atari ST users
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- ☐ CP/M Bios for CP/M users
- ☐ Boston Rainbow News for DEC Rainbow users
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- ☐ Investment Newsletter for investors
- ☐ The Lotus Newsletter for Lotus software users
- ☐ MicroEconomics for consultants and entrepreneurs
- ☐ Online Connection, telecommunications news
- ☐ Optical Insights, the CD-ROM newsletter
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- ☐ re:CAP, computer-aided publishing newsletter
- ☐ Science and Engineering Newsletter
- ☐ Soundwaves, the computer music newsletter

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Total amount enclosed $_____

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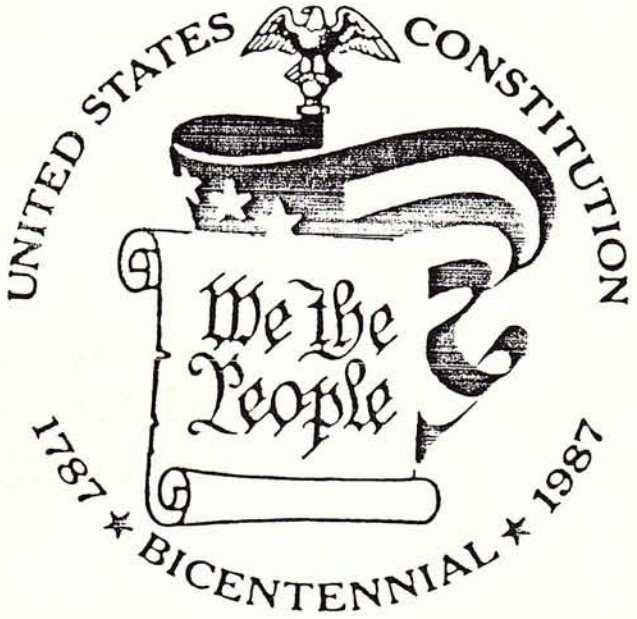

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STOW THE SAILS

This concludes another voyage. It certainly was a long one. This issue was entirely composed with the use of an ST. Artwork was performed using DEGAS from BATTERIES INCLUDED (or now Electronic Arts) and PRINTMASTER from UNISON WORLD. Mickey Mouse and Snow White are trademarks of Walt Disney. If you would like to submit an article, send your article on 3.5 inch disk (any word processor in ascii format) to the editor. You may upload your article to the BCS Atari BBS at (617) 396-4607. I want to thank all those who contributed to this issue. Don't forget - THE NORTHEAST ATARI COMPUTER FAIR - THE CENTRUM IN WORCESTER - OCTOBER 10 - 11. Happy STailing. (Ed.) as always

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